Vol. 40 BALTIMORE, MONDAY, DECEMBER 3, 1917 No. 14

TIN CONTAINERS

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WEEKLY REVIEW

With speculation removed the market is lacking in spirit—Government needs more tomatoes—Some articles are on the decline.

The task of reporting the weekly canned foods market has become a mere sinecure: the idea today is that all speculation has been removed from the market, and with it all tendency to changes in price, except such readjustments as will bring those prices to agreement with what the Government has been pleased to call a fair and reasonable profit basis. There is a great deal of honest uncertainty as to what this fair and reasonable profit is; that is as to the figure the canner should ask for his goods on this basis. At the same time we believe there is a good deal of side-stepping in this matter, and that if these men would change places with the buyers, and then ask themselves if they are charging only a fair and reasonable profit in the price they ask, they would know the answer. It is now seen that jobbers are taking only such goods as their immediate requirements demand, and they are re-selling them, in conformity with their license instructions, upon a fair and reasonable profit basis. But they see that they can continue to do this, and that there is no advantage in buying for long months ahead, which, of course, was always done with the expectation of making additional profit on their investment. In this they may be making a mistake in some articles. For there are a number of canners who contend that their cost of production is at or above present market quotations—was higher than the figures named by the Government for its purchases of canned foods—and that upon the Government's own statement they are entitled to a fair and reasonable profit over cost. Such canners may hold their goods in the hope that later on the market will be so depleted that higher prices will result, and give them their opportunity to dispose of their goods at this profit. But to secure this price the canners will have to hold the goods and take their chances.

The market on tomatoes has reached $1.75 for the No. 3s, which is within 5c of the Government's price of $1.70, and some reports say goods have changed hands at the Government figure. One influence of this factor is shown in a letter made public by the Virginia Canners' Exchange, which reads: "We are in receipt of a letter from the U. S. Food Administration reading as follows: 'Mr. C. H. Bentley has advised this Divi-

sion that he is in receipt of a letter from you stating that you have approximately 100,000 cases tomatoes unsold. The Army and Navy are in need of a great many more tomatoes and we will appreciate it if you will tender as many tomatoes to us as you possibly can at prices named by the Army and Navy.' "

Then the Exchange's letter goes on to say:

"They will pay $1.25 per dozen for 2s and $1.70 per dozen for 3s tomatoes. If you have made 100 per cent delivery on your future sales, kindly write direct to the U. S. Food Administration, Washington, D. C., and tender them all you wish to sell at this time and at above prices. Please see that buyers are satisfied with their deliveries, however, first. Prices named are net, no brokerage or discounts to come off, our services being free.

"Help win the war by supplying all you can."

Our daily papers this week contained sensational charges against the canners of hoarding large amounts of goods. Such reports are as ridiculous as they are untrue, for as we have already shown there is no incentive to hoard, on the part of the canner whose costs will permit him to sell at Government named prices, because the law compelling only fair and reasonable profits will operate just as strongly six months from now as it does today, and the holder will find himself obliged to part with his goods at the same price he could get today—if he could find a seller. But there is the whole trouble, the sellers are willing, probably, but the buyers are few. And if the buyers will not take the goods out of the canners' warehouses, the canners should certainly not be accused of hoarding, even by the daily press.

Western corn canners are reported as offering standard corn at figures lower than a fortnight ago, but anything definte along that line seems very hard to locate. The rumors are active, but the market is dull. We quote No. 3 tomatoes in our market pages at $1.80, but sales in the Daily Market Report show $1.70 on large blocks. No. 2s are quoted here at $1.25, but in the counties at $1.22½. No. 10s continue to rule at $7, and there seems less disposition on the part of this size to come near the Government price of $5.25 than on any other article. It would seem the Government made a very much too low figure upon this size and that while it will get its supply at the figure, the market will have to be much higher.

Standard Maine style corn is quoted now at $1.65, a decline of 10c per dozen on the week, and Evergreen corn is quoted at $1.60, a decline of 15c.

Spinach is also lower than last week, showing declines in all sizes. The fall crop of spinach in this section has been of good quality, but ruling high for the green article. Growers are not governed by the fair and reasonable profit other men come under. Other changes in the market are very few and trading is quiet.

NOTES AND OBSERVATIONS.

Ohio Canners at Cincinnati.—Last week we announced that the annual meeting of the Ohio Canners' Association would be held at Columbus. In this we were mistaken, for the meeting is to be held at Cincinnati, Hotel Gibson, on December 11th and 12th. Make note of this change and be ready to attend, as the meeting promises to be an interesting and largely attended one. Secretary Shook is now at work upon the program—and Shook is the premier program producer of the times.

Pennsylvania Meeting Postponed.—Secretary J. M. Flinchbaugh, of Red Lion, Pa., writes us that the annual meeting of his State Association, which should be held, according to the By-Laws, on the first Tuesday in December (the 4th), has been postponed; this action having been deemed advisable by the officers. Due notice of the date of meeting will be announced in time.

Maryland Canners To Be Entertained.—Maryland canners will be in Baltimore to the man on Monday, December 3rd, and stay over until Tuesday, December 4th, the two days of meeting of the Maryland Canners' Association. All have become fully aware that times have changed and that each and every one of them must be fully and properly informed upon his duties durng the present war-times, and that there is the utmost need of knowing just how to proceed during the coming year. So they will meet with their fellow-canners at this Convention, and while here they will be entertained at luncheon on Tuesday noon, and at a banquet and cabaret show on Tuesday night, all at the Hotel Emerson. And the Maryland Canners' Association will be the host.

Heretofore it has been customary for the allied supplymen of the industry to furnish this sort of entertainment at their expense; but this time the Association decided to do the honors, but to allow the supplymen, and, in fact, all associate members, to have a share in the expense by increasing the associate membership dues from $5 to $10. There is no increase in the canner dues, these remaining at $5, so no canner need fear attending from this cause. The same aggressive and wide-awake committee as before is in charge of the entertainment features—Messrs. Harry W. Krebs, Robert A. Sindall, James F. Cole, and Robert A. Rouse—and that means it will be well done.

The whole stage is set for one of the biggest and best meetings the Maryland Canners' Association has ever held; the latch-string is out and everyone is heartily welcomed. And they will be there! So must you!

H. A. Baker on Tin Committee.—Mr. H. A. Baker, Chief Chemist of the American Can Company, has gone to Washington to become a member of the Committee on Conservation of Tin Plate. Mr. Baker's long experience both of a technical and practical nature, together with an intimate knowledge of manufacturing, should make him a very desirable member of that committee. His mental poise and the judicial character of his methods of analysis will very much aid in a fair solution of the tin plate problems as they affect the food situation of the country.

Your Subscription Bill.—You may or may not have received a subscription bill in the same mail that brings this at this time. We send out these subscription bills but twice issue to you, depending upon whether or not you are paid up a year—December 1st and June 1st. This time we are asking you to hold the invoice, marking it in any way you please, to show how and when it was paid, and simply sending us your remittance, upon receipt of which you will be given credit for the payment. Your cancelled check or other form of remittance is legal receipt, and we make this suggestion merely to save postage. Of course, if you wish a receipted bill, it will be sent to you; but unless this is particularly requested, a receipt will not be sent. This is one of the little bills which you will find it most satisfactory to pay at once and so have out of the way for a whole year.

Indiana Canners Meet.—The Indiana Canners' Association held its annual meeting, as scheduled, on November 22nd and 23rd, with a very good attendance present. Much of the important work was done in executive session, but it can be said that the meeting considered the question of a sufficient acreage next season at a proper price, and was assured by Dr. Barnard, who is the State representative of the U. S. Fod Administration, that this feature would be taken care of in a manner satisfactory to the canners. Prof. Woodbury, of Perdue University, gave a most interesting address upon crops and crop yields, and Mr. F. M. Shook, of the Ohio and Western Associations, explained the purposes of the National Canners' Association inspection plan. As a result of this consideration a committee considered and brought in a resolution asking the Government to name minimum prices on tomatoes, but not to name a cost, plus profit basis, for such price. The seed situation was considered in full and many other important subjects. The election of officers resulted as follows: President, Harry McCartney, Greenwood, Ind.; Secretary-Treasurer, Paul Fishback, Scottsville, Ind.

Minnesota Canners Meet.—The Minnesota Canners held their annual meeting in St. Paul on November 19th and 20th, the principal feature being the annual scoring contest, presided over by the State Cannery Inspector, A. J. Anderson. The quality of the goods are judged and promiums issued to the processors in each case, and the plan is tending to greatly increase the reputation of the State's output.

General cannery inspection, under the auspices of the N. C. A., as is now done with the sardine canners, was considered, and the committee appointed to further consider the matter reported favorably to it, but considered the expense too heavy for the canners.

The delegates were treated to an instructive address on sanitation, labor for 1918, the selling of futures, soil improvement and general growing topics and many other subjects. The election of officers resulted as follows: President, E. B. Cosgrove, Le Sueur; Vice-President, P. J. Loveland, Monticello; Secretary-Treasurer, W. A. Christensen, Le Sueur.

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NEW YORK MARKET

Speculative interest has disappeared from the market—Freight situation still bad—Prices are holding firm—All movements confined to actual requirements—Corn easier—All canned food offerings and sales are light—Notes of this Market.

Reported by Telegraph.

New York, November 30.

The Market.—All speculative interest has disappeared from the market and prices remain about steady as previously quoted. Sales are made only as the goods are wanted for immediate use. No one is buying for a rise that may come in the future and no one is undertaking to manipulate the market. That has all passed and all varieties are standing upon the basis of what quantities are wanted for immediate use. While it doesn't seem like the New York market, many are quite ready to believe that n order to do business in the future this matter of speculation will have to be regulated. Once buyers become used to doing business without it they will hardly want it back again, some think. But these are all conjectures and the man who attempts to make predictions is undertaking somethting which is difficult enough without peering into the future to see whether speculation is coming back after the government control of the business is removed. In the shipping situation no improvement is reported. Cars come in weeks behind time. Buyers are unable to get their goods when they want them because the cars are so delayed in coming forward. And the same thing holds good in all quarters. It would appear that the number which have come forward of late have improved the situation somewhat, but as a whole the shipping situation is extremely unsatisfactory. Perhaps the philosophic observation of one long in the business that they are fortunate to get any cars at all ought to make the buyer and seller both feel that that they are not in such a bad way after all. Prices are held firmly at quotations, but little movement is noted. Buyers are indifferent beyond their requirements and some say their requirements at present are not large. The steadying influence of the lack of speculation is helping the market. The week was broken by a holiday, but inasmuch as the speculative interest is lacking a holiday doesn't mean as much as it used when speculators were busy.

Tomatoes.—Southern interests are still asking $1.75 for No. 3 full standard goods. They accept $1.22½ for No. 2s since demand for the smaller size is not as large as it is for the larger ones. No. 10s are not available below $7.00, it is said, and spot prices are up to $7.60. Movement is very small, only what are needed to satisfy immediate necessities. It must be admitted that these necessities, as measured by what have gone before, are much smaller and movement is limited in a way that would have seemed impossible a few years ago. Spot prices are $1.45 for No. 2s, with $2.05 for No. 3s and $7.60 for No. 10s, though it is said that $7.50 will buy.

Corn.—The principal feature is that Western interests are offering 1,000 case lots and $1.60@1.65 f. o. b. for standards. In other packs the demand is light. Few seem to be buying, nor do they send in many inquiries. They are apparently well stocked, though those in position to know are uncertain about the situation and say the outlook is clouded. They do not profess to know what will happen in the near future. State corn is held steadily at $2.10 for standard and Maine style standards are quoted at $1.80, while fancies are held up to $1.90. None of these are selling actively and buyers seem to be contented with only small lots.

Peas.—No. 4 sieve standard Alaskas are offered at $1.46 f. o. b. Indiana shipping points. Some No. 2 fancy Wisconsin pack are quoted at $2.10 f. o. b. New York for sweets. Other varieties seem to offer no indication of increasing activity and sales are made in small lots only. Buyers are very conservaever, and the market remains unchanged as formerly quoted. Retailers say the high prices made necessary by the present situation are restricting sales over their counters and they are getting nowhere near the business which came to them before the economy wave started rolling across the country.

String Beans.—Movement is quiet, with sales confined to small lots. The supply in first hands is so small that very little is done. Conditions are rather more favorable for holders than buyers.

Asparagus.—The situation remains unchanged. Holders continue firm in their views, but movement is limited to actual requirements. Conditions seem to favor holders rather than buyers, but at the moment little interest is shown in any grade or size.

Pumpkin.—No. 3 Standards are held at $1.00 f. o. b. Indiana factory, with $1.10 asked for sanitary cans. Not much movement just now. Retailers report a fairly good trade.

Spinach.—Not much movement, but prices are held firm at $1.50 for No. 2s, $2.00 for No. 3s and $7.20 for No. 10s. Buying is in small lots, but no concessions are obtainable, even on large lots.

Fruits.—Offerings are extremely light and sales are light, too. Few buyers seem to want to go very far in stocking up further until the situation changes and are now making very little effort to get business. The market remains, therefore, about as it has been for some weeks, with little buying in progress, but with all holders firm because they believe that the situation warrants their still holding their prices firm.

Apples.—Not much change in the general situation. New York No. 10s are held at $5.75 with Southern quoted at $4.75. Maine pack are held steadily at $5.00, and are hard to get at that figure. Western pack are firm at $4.75. Buying seems to be too small to really make a market. Few show any interest beyond satisfying their immediate needs.

Peaches.—California lemon clings are held at $2.45 for No. 2½ extras, $2.25 for extra standards and $2.05 for standards. The market sems to offer very little indication of a change for the present. No. 3 Southern pies are quoted at $1.12½ and No. 10 pies are held at $3.75. Not much buying of eight at the moment. No. 3 standard white are held at $2.05 and No. 2 standard white at $1.42½.

Pineapples.—The market remains about steady, with an upward tendency upon a few grades which are hard to get. But in general the situation remains unchanged and is about as humdrum and uninteresting as it has been for some weeks. Supplies are understood to be low and hard to obtain. Hawaiian sorts are in fair supply and movement is about as usual.

Apricots.—Standard No. 2½s are held at $2.05 and extra standards at $2.35, while extras are held firmly up to $2.50. No. 10 extras are quiet at $7.75.

Berries.—Movement is restricted because of the impossibility of getting stoc. Some is entirely exhausted and others are getting down to a very low ebb. Not for years, if ever before, have berries been so short at this season. They will be exhausted long before it is possible to get a new crop ready for the market. This applies to all alike, though it is still possible to buy No. 2 Maine blueberries at $1.70, and No. 10s at $8.00. No. 10 strawberries are quoted at $11.00, and few are obtainable at that prohibitive price.

Salmon.—No change is reported in the market. The situation is about the same as last week, with perhaps a little tendency to neglect the buying which some believed would begin about this time. The conditions under which business is done indicate that trade will hardly change until it is necessary for the distributors to come into market and replenish their stocks. It is said that supplies are so short trouble will follow later, but at the moment all buying interests are more or less indifferent. Prices remain about steady, but trade is so small that it hardly makes a market. Alaska reds are held at $2.75 here and pinks are firm at $2.00. Chums are not moving to any considerable extent, but prices are held steadily up to $1.85, with occasionally a sale made at $1.80. Mediums are quiet at $2.50, and Cohoes are little wanted at $2.65 for No. 1 flats.

Sardines.—The situation is unchanged and sales are made in a small way only. The market remains steady as previously quoted. Buyers are operating only in small lots, while sellers have too few on hand to care much whether they get any business or not now. The Government basis still holds and all transactions are based upon that. Supplies are far below normal and sales are made in a small way only for immediate delivery, or a few now and then to replenish stocks sometime in the future.

Tuna Fish.—Movement is steady, though not much buying is done. The high prices are holding back many buyers. No. one-fourths are held at $5.00, No. one-halfs $8.00 and No. 1s at $13.00. These figures are too big to suit the average buyer.

HUDSON.

NEWS OF NEW YORK.

Retailers have complained somewhat that they are not getting as much trade in canned foods as they commonly have on Thanksgiving and ascribe the reduction to the instructions of the conservation interests to use as little of these prepared foods as possible, taking the fresh vegetables and fruit which are now plenty instead. Another cause of reduction in sales is the high prices asked by practically all retailers. They are holding up their prices even when some jobbers have cut them. With no way to discipline retailers, prices to the consumer are no different even though the canner is accepting lower prices. This probably exerts more influence on sales than the use of fresh vegetables and fruits in the place of canned varieties.

The injunction to all women to can liberally promises to work a great benefit to the industry before it is done. Many housewives have put into cans their surplus fruits and vegetables who never did it before. From these they will learn the use of canned foods and when necessity for canning to help win the war passes, as it must pass some time, canners have only to give women good products to be sure of a better business than they ever enjoyed before, and this business will grow. To learn the value of these goods by necessity will create a desire for them which will greatly increase trade. Women won't always can. Take away the patriotic influence and a great many of them will cease to put up foods themselves, but will become buyers.

New York has not appeared actively interested his week. Buyers did not care to take hold. Sellers have been conservative. A fair movement only in staples is reported. Very many appear to be refusing to take fancy articles, and the trade in staples, which they want most, seems to be light.

The production of canning crops next year is considered good by some, but others say unless something can be done to increase the supply of tin plate the increase of crops won't do any good, and may do harm by entailing losses upon producers of crops, merely because it is impossible to provide cans. Speeding up in one is quite as essential as an accelerated movement in the other.

Investigation of new sources of supply of fish for canning purposes will unquestionably result in a number of satisfactory additions to the food supplq. The ocean must teem with fish that have never been used for food, but in these times of stress, when it is a problem where to find substitutes for meat new kinds of fish are coming to be appreciated. Canned whale meat is looked upon as a desirable addition to the long list of canned edibles.

On meatless days, and perhaps some others, certain New York restaurants make up what they term a "vegetable platter." It is made up of tomatoes, string beans, peas and spinach, all of them from cans. It needs no expert knowledge of the situatiton to understand that such free use of vegetables as this helps to deplete the supplies much more rapidly than commonly and therefore larger outputs will be needed in order to care for the old demand and the new too.

A disappointing feature of the market for some is the scarcity of berries. Aside from peaches, apricots and perhaps some varieties of plums, nothing is better liked than berries. And a shortage, such as has developed this year, is a real hardship for many. Some grades of berries are the acme of the canners' art.

Some one has advocated a wider use of apples in cans, and his observatioon seems to be well taken. Always the most satisfactory of all fruits for a long period of time the capabilities of the apple are not appreciated by a considerable proportion of city populatioon. Preserved in cans they can be kept indefinitely and are always ready for use. The suggestion seems worthy of consideration.

With speculation gone from the New York market half the interest of the game is lost. Many have played the speculation game because of its exhilaration. Now that is removed the zest of trading suffers. Speculation has been much decred, but it frequently works to keep up an interest in commodities without intrinsic interests.

Considerable rhubarb is used by restaurants which formerly resorted to it, but occasionally. It takes the place of fruit for some purposes and serves as appetizer upon any occasion. Its principal objection is it uses too much sugar. Few care for it unless it is liberally sweetened, and that takes sugar. Apparently it is coming to be more generally used than ever before. A vigorous grower, unlimited quantities can be produced.

All sales of canned foods in this market are made at cost, plus a reasonable margin of profit, some remark upon the difference in the situation as compared with some previous times when shortages developed.

SEATTLE MARKET

Solid trainload of Salmon moves Eastward—Behring River fisheries closed—Fall fishing poor—Some notes on vegetables and fruits in this section.

Reported by Telegraph.

Seattle, Wash., Nov. 30, 1917.

Salmon.—Salmon is moving East now at a rapid rate and stocks are running down very rapidly. A solid trainload of canned fish left Seattle this week for the East. This shipment belonged to Libby, McNeill & Libby and consisted of 40,000 cases, valued at close to $350,000, said to have been the most valuable single shipment of salmon ever made from a Pacific port. The shipment was bound for New York city. The fish was shipped over the Chicago, Milwaukee & St. Paul Road. There is a good deal to be gained in shipping salmon in solid train loads, as was found last year when some large shipments were made. The shipment can be handled faster and with very little delay, since the train does not have to be made up again en route, nor does any great amount of switching have to be done. Shipping in this manner helps the car situation, in that the cars are not tied up anywhere near as long as when the salmon is shipped in individual car lots. This particular shipment was loaded at the Port of Seattle, Stacy-Lander street terminals, in which Libby, McNeill & Libby store their salmon pack. These terminals are equipped with machinery which greatly facilitates the loading of canned foods into the cars.

Fishing Grounds Closed.—Acting in harmony with the leading cannery concerns affected, the Alaska Department of the United States Bureau of Fisheries will close the Behring River for salmon fishing. A meeting of those interested was held in Seattle recently, in the offices of W. T. Bower, of the Bureau of Fisheries. Twelve fishing companies were represented and are said to have concurred in the plan to close this river to fishing.

The measure is in protection of the red salmon which spawn only in lakes. Fishing will be permitted in the deltas of the Behring River, but along the course of the river up to Behring Lake, which is the depositary of the eggs, absolute protection will be enforced.

Secure New Tender.—In preparation for the 1918 fishing season, the Fidalgo Island Packing Company has just let a contract for a $35,000 cannery tender, which will be operated in connection with the company's salmon cannery at Herendeen Bay, Alaska. This vessel will be 90 feet long. A number of Alaska canneries are planning to have tenders built during the winter, but this is thought to be the first actual contract for this kind of craft that has been placed with local shipbuilders.

Weather Too Good.—Fall fishing is now about over and has been a disappointment to a number of concerns that had hoped and planned on putting up a lot of fish during November. The weather has been too good. The fish have stayed outside the entrances to Puget Sound and Grays Harbor. That large numbers of fish were swarming the waters outside these two harbors is stated by fishermen who ventured that far out. The fall season ends December 1st. Packers declare the total pack will be one of the smallest in years.

Vegetables.—The Puyallup Fruit Growers' Association has obtained an order for one hundred tons of canned cabbage. The canning of this will commence at once. The cabbage is now being assembled. Immediately after the cabbage is out of the way the company expects to put up a large quantity of jam. A large amount of fruit is now held in cold storage for this purpose. The demand for jams and preserves is unprecedented. The plant will be kept busy the greater part of if not all winter. It is expected that an unusually large quantity of apples will ultimately be canned.

Owing to a scarcity of its regular stock of tins, the Sumner cannery has been using an enameled can which costs 12 cents per dozen more, but which will enable the company to keep up with its contracts.

The market for Northwestern packed canned foods is very brisk. Some buyers report great difficulty in obtaining near an adequate supply. One prominent dealer here states that in spite of the abnormally large quantity of vegetables and fruits packed by housewives this year, he doubts if the demand for cannery packed goods has been affected at all. "Certainly," he says, "I fail to note any falling off in demand, although I felt that this large pack of fruits and vegetables in the homes would be reflected in the market." "SALMON."

CHICAGO MARKET

Approach of holiday season spreads a quietness over the market—Beans and Beetes carce—Peas are in demand—Spinach too high in price—Apples being delivered to the trade.

Reported by Telegraph.

Chicago, November 30, 1917.

General.—The market continues dull and uninteresting. The approach of Thanksgiving and the holiday season tends to divert the attention from canned foods to other kinds and the proximity of the 1st of January, when stock-taking time arrives, prompts the wholesale grocery buyers to be indifferent in regard to increasing their stocks, and disposed to reduce in all articles that do not look strong on the market, or are not scarce.

The regulation of profits by the Government on the licensed or staple articles of canned foods, takes away from them the attractiveness and inducement for speculation, and causes the wholesalers to be content with their holdings and to sell what they have except in rare instances, where there is a disposition to buy at present prices, in order to average-up costs. Trade, therefore, can be called stagnant in nearly every line of canned foods.

Pork and Beans.—Canners understand that the Government has prohibited the packing of dry beans in cans and the can companies are refusing to furnish cans for that purpose. This is having the effect to make somewhat more valuable the stocks on hand, and to stop the manufacturing of pork and beans, red beans, pink beans, etc.

String Beans.—There is some demand and request for string and stringless beans and a constant demand for Refugee green beans; but to the last there is no response, as those who own Refugee green beans are apparently determined to hold on to what they have for their own use. This refers to the stocks held by wholesalers, grocers or second hands, as canners have no stocks of Refugee beans.

Canned Beets.—This article is exceedingly scarce and hardly obtainable at any price. A thorough search of various markets, both at second and first hands, made by one of our local brokers, resulted in the finding of a few hundred cases of undesirable sizes and styles.

Canned Corn.—This article is not offered and not inquired for to any extent. Wholesalers seem to be satisfied with the stocks they have and are not interested in increasing them. The offerings from first hands are very infrequent and unimportant.

Canned Hominy.—It is not understood by canners that an injunction or prohibition has been placed on the packing of hominy and canners are still offering it at prices ranging from 85c to 95c per dozen for No. 3 cans of standard quality, f. o. b. cannery. A few canners express doubt as to the legality of using cans for this article; but others take the position that field corn only is used and that the supply necessary for canned hominy is not taken from the general supply, but is merely changed as to the style of food for the purpose of consumption, and that in the process of manufacture it is improved as to its edibility and rendered more convenient and available, while the cans needed for preparing it are not of sufficient importance to greatly decrease the supply of cans to be conserved for perishable food. Why this article should be regarded as an exception is difficult to understand.

Canned Peas.—There is an insistent demand for good grades of canned peas, both Alaska and sweets, especially from Eastern markets. Our local market seems to be well supplied and without any interest on the part of buyers. Offerings of canned peas are somewhat more liberal than they were a month ago, but do not show anything like the usual, or an adequate, supply and it is thought by good judges that the stocks in first hands are exceedingly small, comparatively, for this time of year.

Canned Pumpkin.—This article is in somewhat better supply than previously, and although Iowa canners and one or two from other sections are delivering only 25 per cent on their future sales, the Indiana canners are offering prompt shipments freely at lower prices. Purchases have been made here last week on a basis of 95c f. o. b. Chicago for No. 3 standard pumpkin.

Canned Sauerkraut.—A somewhat quieter feeling has developed in relation to this article, and although the price on cabbage has advanced, the offerings of canned kraut are more liberal. Price on standard No. 3 kraut f. o. b. cannery of $1.45 was noted during the week, but most canners are holding at $1.50 to $1.60, according to quality and location.

Canned Spinach.—The purchases of fall-pack spinach have been smaller than usual this year, from the fact that prices were so extremely high that many dealers have cut the article entirely out of their catalogues, and lists are not offering it, as they consider it is not intrinsically worth the price asked for it, as a food. Some decline has been noted from the opening price, amounting in the case of standard No. 10 spinach to about $1.00 per dozen f. o. b. Baltimore—canners probably are finding that the price asked would prevent the article from going into consumption promptly.

Canned Tomatoes.—No interest whatever is taken in this article. Wholesale grocers seem to be well supplied and neither 2s, 3s or 10s are in demand. The decline in the prices has had the effect to stop purchasing.

Canned Tomato Pulp.—Since the Government issued the prohibition order against the canning of pork and beans, tomato pulp in five-gallon cans has declined heavily and can now be bought for from $3.25 to $3.75 per five-gallon cans, as compared with $4.25 to $4.50 about three weeks ago. Catsup makers who have been disappointed in their supply of pulp are offering to buy, but at very low prices, and are predicting that tomato pulp in five-gallon cans will soon reach a much lower level. Holders, however, do not seem to share these views.

Canned Apples.—The deliveries of canned apples from Colorado points are proving of unsatisfactory quality, but having been sold on pro rata contracts, the quantities are being scaled down. Several large canners in Colorado are announcing deliveries of 60 and 70 per cent on contracts. They do not attribute this inability to deliver full quantity to lack of apples or stock, but to the impossibility of securing labor to run their canneries and pack apples. Several canneries report that they have an adequate supply of apples, but no labor to put them into cans.

Canned Salmon.—The market is exceedingly quiet, with scarcely any demand. The season for the consumption of salmon is past and will not come again until about the 1st of May. The Pacific Coast reports a good export demand and prices on the Coast are higher for canned grades of salmon than they are in Chicago. No. 1 tall red Alaska can be bought for $2.60 and No. 1 tall pink salmon at $1.87½, f. o. b. Chicago.

WRANGLER.

HOW TO GROW CALIFORNIA FRUITS.

The Canning Trade is in receipt of the 320-page book entitled "California Fruits)" written by Edward J. Wickson and published by the Pacific Rural Press of San Francisco.

The subject of this treatise is of especial interest to canners and growers of canners' crops in the State of California, but as a guide and assistance to the fruit grower it will be found of considerable interest to those in other States; it is a manual exploiting the methods which have yielded the best results, and contains a list of the varieties best adapted to the different sections of the State.

This is the third edition of the book, being revised and up-to-date, it having just come from the press in September of this year. It is a well printed, attractively bound and thoroughly indexed volume, the price being three dollars per copy, postage paid.

It also includes various vegetables, in fact, most of them grown in that State, and contains practical suggestions for placing the farm on a profitable basis, including the selection of a site, the correction of marshy ground, poor drainage, etc. It is a practical book, designed and written for the progressive truck gardener and fruit grower. Those interested should address The Pacific Rural Press, San Francisco, Cal.

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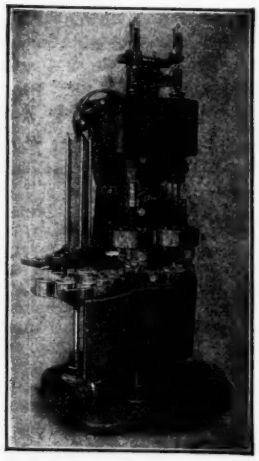

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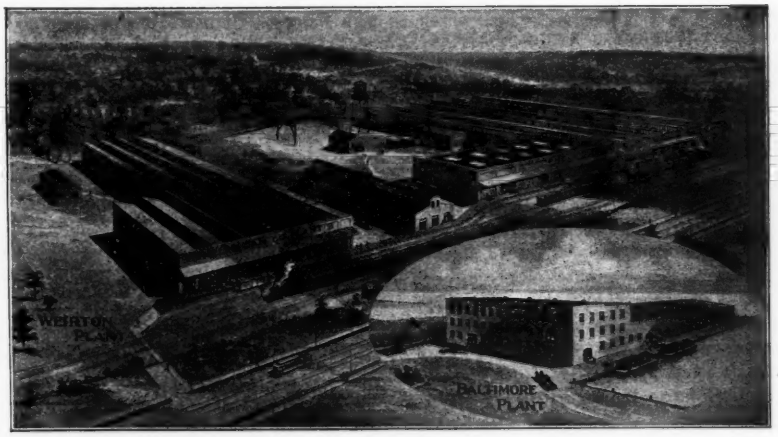

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CALIFORNIA MARKET

Tomato canning is about ended—The Cal. Food Administration Members—Cal. Fruit growers meet—Canners interested in this meeting—Market is upset—Heavy arrivals of pineapples—Coast Notes.

Reported by Telegraph.

San Francisco, Cal., Nov. 30, 1917.

Tomato Canning About Done.—Clear weather is still the rule throughout California and the packing of tomatoes is being carried on at a few places, although the output is now comparatively light. A few weeks ago growers were elated with the manner in which the fall rains were keeping off, a condition which enabled them to harvest crops of fruits, vegetables and grains without a loss. The rain that occurred a couple of weeks ago was not heavy enough in many places to enable farming operations to be commenced and a good downpour at the present time would be of great value. The precipitation to date is only about one-fifth the normal and much work is being held back by the lack of moisture.

The Food Administration Board.—The executive organization of the California branch of the Food Administration has been completed by the appointment of Charles D. Blaney, of Saratoga, as chairman of the marketing and distributing board; Barton T. Bean, of San Francisco, as head of the food industries board, and Sayre MacNeil, of Los Angeles, as chief of the food conservation board. The food industries board will have charge of packers, canneries, bakeries and other producing agencies which operate under Federal licenses. The marketing and distributing board will have supervision over licensed commission and storage dealers, food dealers, brokers, wholesalers and retailers, with the idea of seeing that foodstuffs are brought to the consumer at the lowest possible price. Mr. Bean, of the food industries branch, is a member of the Klink-Bean Co., business organizers, while Mr. Blaney was formerly president of the State Highway Commission.

The fiftieth annual convention of the California Fruit Growers' Association was held last week at Sacramento. The proceedings of this organization are always of interest to canners, but this year they have an added value, owing to the fact that marketing conditions arising from the war are receiving the close attention of growers. John L. Nagle, of Sacramento, representing the California Fruit Exchange, threw a bombshell into the gathering on the opening day when he told the growers that in all probability they would be able to ship no more than one-half the usual fruit in freight cars next year, owing to the need of the Government for cars for more essential foodstuffs. As the shipments of fresh fruits this year amount to about 24,000 cars, a curtailment in the proportion suggested would have the effect of throwing added quantities to canners and dryers. Nagle advised the growers that there was every likelihood that the Government would place fruits and other perishable foods in the non-essential class, and that it would be moved second in importance to essential foodstuffs. W. J. Alexander, of San Jose, director of the Prune and Apricot Association, declared that co-operating maketing and standardization in packing were the back-bone of the industry. The labor question received attention and the proposition was discussed of favoring the admission of Chinese labor during the present condition of affairs.

The Market.—Market conditions are still badly upset, with most of the business being transacted being done between wholesalers and retailers. Tomatoes, corn, string beans and other similar lines are being sold well below first-hand quotations, and as long as this condition prevails there will not be much business done between canners and jobbers, especially on lines that are much higher in price now than they were when prices were named originally. Some business is being done on fruits, as values are much the same as they have been right along. Some packers that have been out of the market for months are again making offerings, including the California Packing Corporation. This concern is now accepting business on the following items: Apples, No. 2½ standard, $1.70; second, $1.60, and water, $1.55. Apricots, No. 2½ second, $1.70; water, $1.60, and No. 10 solid pack pie, $6.00. Black Cherries, No. 2½ extra, $2.75; and Royal Annes, No. 2½ standard, $2.25. Muscat Grapes, No. 2½ standard, $1.70; water, $1.50, and pie, $1.45. Yellow Cling Peaches, No. 2½ second, $1.80; water, $1.65; No. 10 solid pack pie, $5.50. Plums, No. 2½ standard, $1.70; water, $1.50.

Pineapples.—There have been heavy arrivals of canned pineapple at San Francisco during the past month, owing to the eagerness of packers to get their pack to the mainland before the large steamers are taken off the run to the Hawaiian Islands. It is estimated that about 800,000 cases remain to be shipped and that the output for the year will be in the neighborhood of 2,500,000 cases. The Hawaiian Pineapple Company alone has shipped about 675,000 cases and will send out nearly 15,000 cases more before the season comes to a close. Difficulty has been experienced in getting cars for Eastern shipment and buyers there are clamoring for deliveries.

Coast Notes.—The California Peach Growers, Inc., have received a patent for a process of peeling dried peaches and the use of this is expected to mean much to the peach growing industry of the State. While most of the dried peaches packed are sold in bulk, and will continue to be marketed in this form as long as the war continues, the opinion is expressed that when tin plate again becomes plentiful peeled peaches will be packed largely in cans.

The Federal Food Administration has decided not to fix a price for beans and California growers have been requested to sell their product at a price that will encourage them to plant a large acreage next year, but one sufficiently low to enable them to be purchased freely by the public. The California crop is a huge one and there are large quantities of Manchurian beans waiting a market in this country, which will tend to bring prices down to a reasonable level.

The Coast salmon market is very quiet, as unsold stocks are light and wholesalers are well supplied. The prices fixed by the Government covering the allotment of 18 per cent set aside for Army and Navy use, took the wind out of the trade, as rates considerably higher than $1.75 for reds and $1.50 for pinks were expected. The Food Administration's announcement has caused considerable explaining to be in order, with jobbers demanding to know why they have been charged such high prices. Canners blame the buyers for the situation, declaring that the eagerness of the latter to secure stocks, taking almost all of it out of first hands, was responsible for the advance. The Government has not purchased any Columbia River chinook salmon, from what can be learned, and packers are left with 18 per cent of their pack of this fish on hand. There is but a light demand for this at present, but no trouble is anticipated in eventually disposing of all holdings.

The California Canneries Company has ended its packing season at Campbell, Cal., with a pack exceeding the early estimates. More than one thousand tons of tomatoes alone were packed. The plant is to be enlarged next season.

The French Sardine Company has been incorporated at San Francisco, Cal., with a capital stock of $20,000, by James and Ivo Mirkovich, Joseph Mardesick, Nick Vilicich and Martin Boganovich.

The Fort Bragg Growers' Association, Fort Bragg, Cal., is winding up the season by making a pack of apples to special order.

The California Packing Corporation has purchased a large quantity of Government timber near Susanville, Cal., and will erect a manufacturing plant, it is announced, for the making of box shooks.

Among the recent visitors at San Francisco have been F. M. Warren, president of the Warren Packing Co., Portland, Ore.; G. E. Fisher, assistant superintendent of the Hawaiian Pineapple Company, Honolulu, T. H., and C. J. Gordon, manager of the American Can Company's branch at Los Angeles.

E. J. Benjamin, general manager of Parrott & Co., San Francisco, has returned from a business trip through the Northwest.

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THE WISCONSIN PEA CANNERS' CONVENTION

Somewhat of a Canners' Chautauqua Held at Milwaukee---The Good Advice Given---The Resolutions of the Convention.

(Continued from Last Week.)

Leaving aside the many impromptu talks, and omitting the hearty discussions which took place in the meetings of the Wisconsin Pea Canners' Association, we can get right to the heart of the work by taking the address as made in explaining first "Maximum Production," and secondly "Utilization of By-Products," two essentials in this line of industry. These two subjects are treated in detail by men best qualified to speak on them.

First, we will consider:

Factors Determining Maximum Pea Production.

SOIL.

By W. W. Weir.

In order that we may gain a clear idea of the principles upon which crop production depends, it is necessary that we distinguish clearly between the factors which determine successful crop production and the factors which determine fertility.

FACTORS IN CROP PRODUCTION.

Succesful crop production depends largely upon five factors, namely: 1, fertile soil; 2, good seed; 3, favorable temperature; 4, light; 5, protection from injury.

Good Soil is a undamental factor. Not only should the soil be well drained and easily worked, but it should possess all the qualities, properties and conditions which impart to it a productive capacity. The adjective "fertile" is commonly used to describe such a soil.

Good Seed. It is generally recognized that good seed is a factor of much importance. Poor seed in poor soil means miserable failure. Good seed in poor soil renders just as little, if not less, for labor than poor seed in good soil; but the best combination is good seed in good soil.

Favorable Temperature. The temperature at which plants make their best growth varies with the different farm crops. In diversified farming there is no weather but what is good weather, since when it is unfavorable for one or two crops it is favorable for the others.

Temperature however, is beyond the control of man, except under artificial conditions. The best that a farmer can do is to plant his seed at such a time as to enable the respective crops to take advantage of the favorable temperature conditions. In this the farmer is guided in his endeavors largely by the weather averages of his section or locality.

Light. Sunlight is absolutely necessary for plants, because this is the source of the energy required by plants in the manufacture of foods. The light factor in the growing of peas, however, is not one which may be controlled by the farmer. It is only when a farmer wishes to secure a stand of clover in the pea field that light is an important factor for him to consider—not so much for the peas, but for the young clover. A heavy growth of peas will shut out the light from the young seedling, and if the light is entirely shut out, then the young seedling will die.

Protection from Injury. A farmer may be defeated in his plans for raising good crops if he fails to protect them, if need be, from injury from birds or animals, insects, diseases, weeds or too much water. Proper fencing may be an important consideration in protection. Likewise poison bait for gophers, grasshoppers and so forth; spraying, treatment for smut in grains and onions, and for scab in potatoes; avoiding rich or diseased soils for particular crops; thorough cultivation; better drainage, and so forth. In regard to growing peas, it is very necessary to avoid soils which are diseased, especially those soils which are infested with pea blight.

Of the five factors in crop production, the soil, the seed and protection are within the control of the farmer in a greater or less degree. Outside of good seed, fertile soil is the most important factor.

Soil Fertility. A fertile soil is to be defined as a soil which produced good or high yields, or it may be defined as a soil having a productive capacity.

The noun "fertility" means a "state or quality of being fertile, fruitfulness, productiveness, richness."

Soil fertility, therefore, is to be interpreted as the capacity of a soil for producing good or large yields.

To maintain soil fertility means to maintain a productive capacity; and to increase fertility means to increase the productive capacity of a soil and make it produce still better yields.

Fertility does not mean the capacity of a soil for producing the highest possible yields. We can speak of degrees of fertility in a similar sense as degrees of richness. Low fertility implies that the yielding capacity is not very high; infertility means the lack of productive capacity.

Fertility is not some one "thing" that can be put into a soil or taken out at will; but it represents the sum of certain soil conditions, qualities and properties which may be expressed in the term "productive capacity."

Fertility, as applied to a soil in Wisconsin, for example, does not imply that the soil has the capacity for producing good or high yields of all kinds of crops to be found in the world, but it has meaning only in relation to particular crops—namely, those which are grown in that particular climate or section.

Crops Indicate Fertility. Crop growth is the only indicator of soil fertility, and since the requirements and adaptability of different crops vary, a soil may be considered fertile for one kind of crop and not for another. For example, a soil may be able to grow excellent crops of clover, corn, potatoes and grain, but fail absolutely to produce a crop of peas.

FACTORS DETERMINING FERTILIAY.

The factors which determine fertility are as follows:

1. A suitable moisture supply in the soil.
2. Sufficient air in the soil.
3. Good tilth. Nitrogen.
4. Sufficient available plant food elements. Phosphorus.
5. Presence of helpful soil organisms. Potassium.
6. The absence of harmful agencies in the soil. Calcium (lime).

If all of those factors are most favorable, maximum yields may be obtained.

Fertility, or the productive capacity of a soil, may be limited or brought to naught by just one deficient element or an unfavorable condition.

Many soils are unproductive because one or more factors are unfavorable. In many instances poor yields and even failures in growing peas may be due to no other cause than the lack of proper nodule-forming organisms. In other instances a lack of carbonate of lime is responsible for low yields. In other instances the lack of both carbonate of lime and the proper soil organisms are responsible for failures.

Soil Exhaustion. It is important to remember in this connection that soil exhaustion is not the result of just one lacking element or of one unfavorable condition. It is true that peas growing on soils which have been under cultivation for many years, and on which the yields of common farm crops have been reduced through excessive cropping to poor yields, the yield of peas may be greatly increased through the use of phosphate fertilizers, since the exhaustive cropping system has reduced the phosphorous supply in the soil to such an extent that peas suffer for want of this important element. Generally an exhausted or depleted soil is the result of several unfavorable conditions, which, acting together, bring about a state of infertility. All of the fertility factors are necessarily affected, and instead of their acting favorably for good yields they act unfavorably and thus cause poor crops or prevent any yield at all.

Soil Fertility in Maximum Pea Production. The secret of a good yield of peas consists in causing each vine in the field to produce just as many good pods as possible. To attain this object a good farmer, because of experience, selects a workable and desirable soil, prepares a good seed bed, increase the strength of the soil, if need be, by adding manure or commercial fertilizers, and then trusts to the weather for the rest.

When we analyze this method of procedure, we find that the farmer unconsciously brings into play the factors which determine fertility. In other words, his whole program centers on soil fertility.

Limiting Factor in Pea Production. In considering the growth of peas in Wisconsin generally, there are four factors which should receive careful consideration if better yields are to be secured. These factors maybe placed in the order of their importance as follows:

1. The need of lime (carbonate of lime).
2. The need of inoculation.
3. The avoidance of "blight" soils, and
4. The need of phosphate fertilizers.

A fifth factor may be mentioned, and that is the use of barnyard manure.

Lime. Peas as a leguminous crop require carbonate of lime, and they respond to a marked degree to lime application. The Litmus paper, in determining acidity, is a safe test to use in the hands of the farmer, for him to determine whether or not the soil requires lime. Any kind of lime, either pulverized limestone, refuse lime, or air-slacked lime, which is finely divided and comparatively free from moisture, is the best lime to us. For best results it should be applied at the rate of at least two tons per acre after the land is plowed, and mixed with the soil. It should be remembered that the place for lime is in the soil, and not on top of it.

Inoculation. On fields which have been growing peas for many years there is practically no need of inoculation; but on fields which have never grown peas it is well to consider inoculation when peas are to be sown for the first time.

Blight. Peas may be grown for many years on the same land if attention is given to fertilization, but as soon as blight appears it is then unwise to try to raise peas on the same land more than twice in succession. The rule safest to follow is to grow peas in a rotation, and if any soils are now infested with blight, it should be rotated to other farm crops for at least five or six years before peas are again grown.

Phosphate Fertilizers. On exhausted soils acid phosphate applied at the rate of from 200 to 300 pounds per acre broadcast is to be recommended. If the soil is very poor, this fertilizer may be applied to best advantage if mixed with manure at the rate of about 50 pounds per ton. Mixed fertilizers on average long cropped soils may prove very profitable. Best returns from any kind of fertilizers, and even from manure, can be secured on acid soils only after such soils have been first limed.

SUMMARY OF THREE YEARS' WORK ON PEAS AT COLUMBUS.

In some preliminary work done during the past three years on Miami silt loam of less than medium acidity, I have found that lime alone applied at the rate of two tons of pulverized limestone per acre gave an average increase of peas (seed) on land treated with limestone and fertilizers (including manure, phosphates and potash) over the same fertilizer treatment but no lime, 27.8 per cent.

In 1916 lime with acid phosphate and manure (manure applied to corn the year previous) increased the yield 23.1 per cent.

Acid phosphate seems beneficial, especially on the limed land.

Basic slug in 1916 applied on acid soil gave very favorable results.

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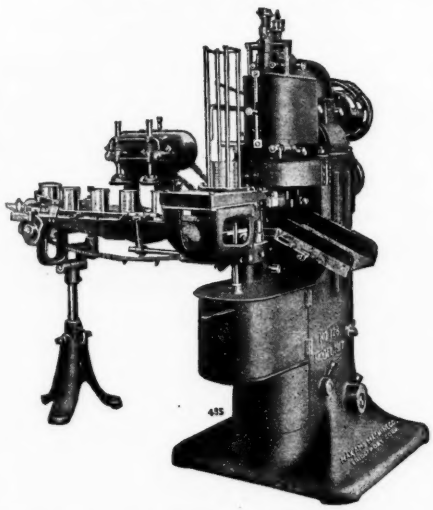

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IMPORTANCE OF THE SOIL.

By W. H. Ames.

When our Secretary asked me to present a paper on the soil factor in pea production to this convention I vesitated about accepting. Although I have been intimately connected with the growing and canning of peas for a large number of years, I feel that there are many things about the soil in connection with growing this special crop that I do not understand. Upon reconsideration, however, I decided to give you merely my experiences, with perhaps a few suggestions for some causes for poor crops with possible remedies.

Of first importance to my mind is a consideration of the type or kind of soil suited to growing peas. I have found that peas do best on rather heavy soils, such as clay loams, silt loams and loams. I have occasionally seen fairly good crops of peas on lighter soils, like sandy loams, but if the season is at all inclined to be droughtypea will not do so well on the lighter soils. On the sands coarser than sandy loams the danger of injury from drouth is so great that it is inadvisable to attempt growing peas on them.

In the neighborhood of Markesan we have a variety of soils, but most of the peas produced there are grown on two kinds, a dark colored and light colored silt loam, both of limestone origin. I do not find that the color of the soil is of any considerable importance. Sometimes the best peas seem to be on the dark-colored soil, but I find just as heavy yields of good peas on the light-colored soil. The difference of crops is not due to much to color of soil as it is to the method of farming.

There is one other soil condition important in the growing of peas, and that is drainage. Peas require a well-drained soil. Owing to the limited root system, peas require a soil that holds moisture well, but they will not succeed in fields where water stands for any considerable length of time after rains or on soils that are wet and soggy.

Briefly, then, the ideal soil for growing peas is a well drained silt form of clay loam, preferably of limestone formation. Preparation of the soil is also worthy of consideration. Fall plowing has some advantages over spring plowing. The opening up of the soil to the frost during the ninter improves its texture. A better, more friable seed-bed can then be made. Another advantage of fall plowing is that the ground can be put in better condition for sowing the peas at least a week earlier than when spring plowing is practiced. Early planting is desirable because the crop then has time to set its pods before the hot weather of summer comes. In normal seasons, with other things equal, the earlier plantings usually yield heavier. These are the important advantages of fall plowing.

But spring plowing is not to be entirely condemned. Good yields are obtained on land plowed in the spring, if the plowing is done early and the soil is not too wet when it is plowed and prepared for the seed.

Thorough and careful preparation of the seed-bed is of great importance. Double the care taken to properly prepare the seed bed will return surprisingly large returns, not only enabling the grower to harvest the maximum amount of peas without much loss, but through greater yields on account of more favorable conditions for greater growth. But, other things being equal, better yields will be obtained on the soil which received the best preparation.

In growing peas on our prairie soils we have two things to contend with—weeds and the compacting and baking of the surface soil after the planting has been done. Some of the poor stands of peas that are found in seasons like this fiust past come from no other cause than extreme packing of soil by heavy rains just after seeding. Then the hot sun bakes the surface and forms a crust through which the tender plants cannot grow. This can be remedied by dragging with a spike-tooth drag having the teeth slanted backward. This will break the crust and kill many of the weeds. A little damage may be done, but the benefit will be greater than the damage.

In my capacity as field man for a canning company I frequently hear and take part in arguments regarding the harmful or beneficial effects of peas on the soil. Without a doubt peas loosen up the soil. There is also another benefit to the soil which many farmers dispute, and that is that peas actually add nitrogen to the soil. This is especially noticeable when a crop of small grain follows. I have often observed that the grain grows taller, and farmers tell me that the yield is greater following a crop of peas.

Sometimes this beneficial effect is not noticeable. My opinion is that peas benefit the soil and serve as a fertilizer in many cases. Just under what conditions this is true I am not prepared to say. But peas themselves respond to manure as a fertilizer. Some of the best crops of peas I have ever seen have been grown on land that was frshly manured. Excellent results are also obtained by growing them on clover sod, but usually they follow small grain or corn.

Peas should be grown only in rotation, and not as a continuous crop on the same land. This is largely to prevent loss of crops by pea blight. There is no practical treatment known for this disease when in a field, but it can be kept out by growing peas only once in a rotation. I think this would be a good rotation to follow. Clover for one year, corn one year, peas one year, small grain one year, seeded to clover. In this way blight can be kept out and the soil kept in a fertile condition. I have been giving results of observations, and do not pretend to know all the whys and wherefores of pea growing. This summer, however, I spent sometime with our county agricultural representative in trying to classify causes of failures. He made observations on a great many fields of peas, and made detailed examinations of sixteen fields. He observed carefully the condition of crops and took samples of the soil and tested them for acidity. Of the sixteen fields studied, while twelve were poor crops or total failures, all of these twelve were grown on acid soils, some of them extremely acid. Two of these fields were somewhat blighted, but most of the failures seemed to be due to the acid condition of the soil.

Of the four slightly acid, one was quite acid, but this was on a farm that was extremely fertile, as shown by the fact that all small grains lodged badly. Our agricultural agent is very much of the opinion that soil acidity and inoculations are important considerations in pea growing. He will carry on some experiments on liming and inoculation next summer to verify his observations. I would recommend that as a fruitful field for study and experiment. If we can make two vines grew and lessen the number of failures, we cannot find out too soon how to do so. There is one rather peculiar cause of failures that has been observed frequently in our pea canning section. Peas never seem to do well following hog pasture. I do not know the cause and have not been able to find out. Our agricultural agent thinks that it might possibly be injury to the crop in its early growth by the bean maggot, rather than an unfavorable soil condition. However this is merely a guess, since he was not on the ground early enough to observe the peas just after their coming up, at which time maggots do their work. I hope observations on pig pastures may be made early next season to determine, if we can, the cause of failures on them. I have given my experience briefly in the hope that they may help you. Now, I should like further discussion of the soil factor in the hope of shedding some light on my own problems and problems more common to other pea-growing sections.

SEED AS A FACTOR.

By R. B. Johns.

As influencing maximum production, probably no element inherent in the seed is of more importance than its purity.

If impure or mixedseeds are sown it is almost certain that the datel of maturing of the different varieties will vary to such an extent that, if cut at any stage, a portion of the crop is lost or the grade is reduced.

Thus purity of seed is of prime importance in that the greatest possible number of plants mature their product at practically the same date, thereby allowing the maximum of yield.

The next most important element is undoubtedly the percentage of germination which the seed possesses. It is folly to expect a maximum of production when the seed bearing a heavy percentage of dead kernels is sown.

Not only are the vacant soil spaces lost which the dead kernels should have occupied with a profitable growth of peas, but they become infested with vigorous growing weeds which in turn crowd out more pea plants.

Following closely upon the percentage of germination of the seed is the quality of virility or visibility. The seed must not alone have power to sprout or germinate, but it must have power sufficient to push along a vigorous growth until such time as the roots of the plant shall have established a strong source of food supply from the earth.

It is for this reason that small, undersized and immature seeds, although possessing the power to germinate, will not produce the maximum of yield.

Any untoward weather conditions or soil conditions cause the plants from this seed to fall and die. Like animals of weak constitutions, they succumb easily to the attacks of disease or misfortune.

A careful selection of varieties maturing consecutively will also aid in securing the maximum of product by extending the season of packing.

Profitable study can be placed upon a sowing schedule by using a limited number of standard varieties of canner's peas in the way of adding to the length of time the cannery is operated.

Sometimes weather conditions materially disarrange such plans, but still they are worth following.

The quantity of seed sown per acre has a direct bearing upon the yield. Many successful growers hold that the ground should be well covered before the hot weather of summer arrives with a growth of vines sufficient to prevent too rapid evaporation of moisture from the soil. Others hold that a thinner sowing encourages the process known as "stooling."

However this may be, it is certain that too thin a sowing encourages the growth of weeds, and that too thick sowing may crowd the plants, under favorable weather conditions, in such a manner as to destroy production entirely.

If the amount of seed to be sown for a happy medium could be named it would probably result in the most even stand, the most uniform yield, and the most tender quality.

The conditions of soil, weather, drainage, elevation, fertility, all are to be reckoned with making this question a difficult one.

The last point to be taken up is the method of sowing the seed and when. Shall it be sown broadcast or shall it be sown in drills and cultivated. It is stated that the people of Belgium, before the World's War, were the most intensive wheat farmers in the world. They planted their wheat in drills and cultivated it and often harvested 200 bushels to the acre.

There is no question but that such intensive methods would be rewarded with maximum production, but the labor required would place it beyond the reach of the industry in our state.

Sowing with the use of broadcast tools would be condemned from the standpoint of the wasteful loss of seed incurred, so much remaining upon the surface of the ground uncovered.

It would appear that the method employed by the canners of Wisconsin with the drill now in use is the most practical at this time.

As to the time to sow pea seed, this will be determined by the season and the soil conditions. Do not attempt to sow unless the seed can be covered to a reasonable depth and the ground left in good tilth.

HELP MANAGEMENT.

By L. E. Wedertz.

Mr. President and Members of the Association:

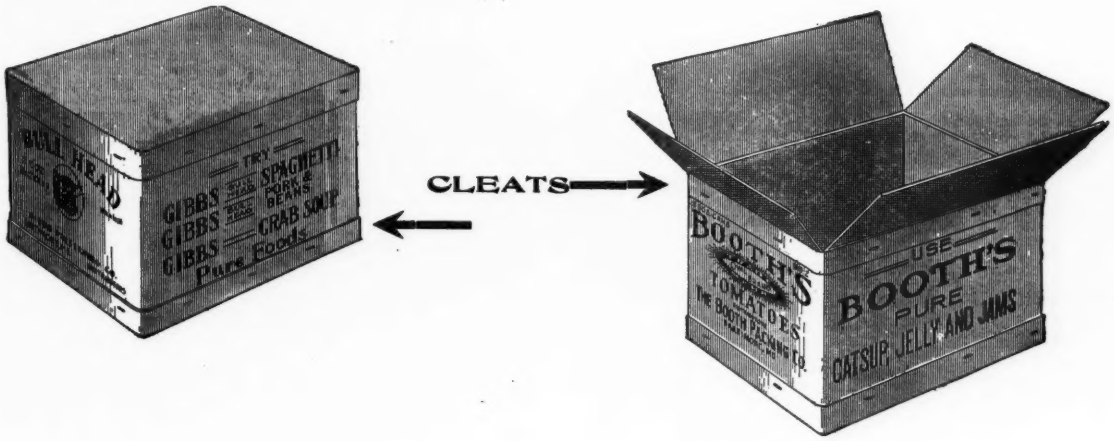
When our worthy Secretary wrote me that I was delegated to address you on the subject of "Handling of Help in Canning Factories," I will confess it rather surprised me, as I could not quite get the idea of what was expected.

We all have our own ideas as to handling help, and each has his own individual way. I know of men who get best results from driving. Others, from cajoling, and others still have the happy faculty of picking out help who require neither method, and with good results.

The principal thing, however, is to engage people who understand one another, and not gather together a motley crew of different nationalities and languages, who like the crew who were erecting the Tower of Babel, as told in the Bible history, each had a separate tongue, and the job was a failure for the reason that all were working at cross purposes.

What I mean by this comparison is that the help should understand thoroughly what each individual is expected to do, and the part he or she plays in the accomplishment of the objective.

To begin at the beginning, the man in the field must know that quality is the objective, and to get this with maximum quantity he must watch his fields closely and get them at such time as they will shell out the maximum in quantity or weight of succulent and juicy peas. He may have a faint idea that this is the objective point he wants to make, but unless he is told and taught this he may be under the impression that it is a part of his general duty to see that this is done, but that other things, such as keeping down the pay-roll, keeping stock in good condition, getting more volume and other things too numerous to mention are of more importance.



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He must be taught that anyone can get quality peas from a field grown from good seed stock on fertile soil by cutting them as we call in their infancy, but that it takes experience and close application to work, with constant supervision, to get these young peas when they are at the growth where they will produce the maximum of young tender peas. To get them just at the turning point at which they will begin to decline in quality.

The viner men must be taught what part they are to play in the general scheme.

They must know that their part is to see that the peas are all removed from the pods and from the vines with the least damage to them.

They must understand that theirs is a very important part in the general work, and without care both in harvesting and vining no factory can put up quality goods.

Men in either position who show no interest in anything but getting things out of the way and out of sight, irrespective of how they do it, and who have no further interest in the product after it has passed through their hands, are no good to any institution and should be removed at once. A good way to teach the men at the head of this and other departments is to cut samples of the finished product for them and point out the defects and what part of these were due to their own particular departments. The grader men should be instructed that, in addition to getting the peas through their grader and out of their hands, they should see that they are properly graded as to size.

Now we will come to a department which is giving us along the Lake shore district a great deal of trouble on account of the prevalence of the thistle, and that is the department of hand picking. This is done almost entirely by female labor, and the rigid regulations under which we are permitted to engage this labor makes it harder to get sufficient help to handle our products than any other department. This, of course, does not apply to all factories, but only those located in the districts where the thistle is prevalent. Our instructions to our superintendents are to regulate their other departments in such a way that a sufficient quantity of peas is vined and graded ahead to keep the pickers and sorters busy from the time they come to work until they are finished for the day. We also instruct them to be very discriminating as to whom they engage, as we want the girls and women to feel that we are just as particular as to their associates as they are themselves, and that they are not considered by us mere automatons, but have an important part to play in our game, and that we realize this sufficiently to surround them with the right kind of environments, so that they can still be workers in our factories and still be able to hold up their heads while away from them. Our instructions are to treat them as one would a member of his own family, and that we expect them to conduct themselves as ladies and to surround them with the right kind of working conditions that will convince them of our sincerity.

We instruct our foremen to exact of their male help gentlemanly behavior, and that they will get more and better work out of them. Also that it will be a long step towards eliminating the unpleasant notoriety we have had in the past, which emanated from so-called "self-styled women vice investigators," who have put our workers in the downtrodden class and have pictured the canner as a man without morals.

The same method should be followed in handling all the help throughout our factories and warehouses. Instil in our employees the spirit of rivalry not only among themselves, but our competitors as well. Show them that we have an interest in their well being and cheer them on in their work. Impress upon them the fact that their carefulness or carelessness means a good or poor can of food for the ultimate consumer of it; that it is going to be eaten, and they may be the one who may have this job to perform. Try as much as possible to equalize the work. Determine as nearly as possible how much work each department must perform, and assign the help accordingly. An idle employee not only represents a loss of his or her wages to the employer, but does more than that. The idle one distracts the attention, or worse, perhaps, interferes with the one who has work to perform.

The work in a cannery cannot always be regulated so that all are busy all of the time, but by a little intelligent foresight the idle moments for any particular department can be reduced to the minimum and the work so planned ahead that when the idle moments come the employees will be off the pay-roll.

Last, but not least, try and surround yourself with intelligent help. They are more likely to come nearer filling our requirements than illiterates. They will give our institutions more tone and create a better impression on visitors, as they will be more inclined to be cleanly in their work and come to a quicker and better realization of the integral part they are taking in the objective. I thank you.

SANITATION IN THE CANNING INDUSTRY.

By J. W. Deniger.

Sanitation is the watchword of modern movements. It has been said that sanitation was a prime factor in accomplishing that great feat of modern engineering, the Panama Canal, for where the French failed was in combatting disease caused by the lack of sanitation. The former scourges of the army, smallpox and yellow fever, have been largely driven out by sanitary measures. This interest in sanitation has also been a dominating influence in the development of industry. We see constantly the efforts of employers to make their plants places of safety and cleanliness for their employees. Our legislators have interested themselves in sanitation to the extent that a large part of the laws which have been passed for the benefit of the employer and the employe are concerned with sanitary measures.

The canning industry as a whole has shown itself willing to work with energy toward the improvement of sanitary conditions, and has shown itself enlightened enough to know what should be improved and how to improve it. I say as a whole, and especially in Wisconsin is that the tendency, but there is still chance for improvement in all of us, and I should say chance for a great deal of improvement in some of us. This is especially true since sanitation is not a stationary science, but is one which is constantly moving onward. So we must at all times be studying the problem if we wish to keep pace with the progress of sanitation. It is for these reasons that I want briefly to discuss the special relation and significance of sanitation to the canning industry.

In the first place, the fact that the canning industry is a food-producing industry, the fact that it supplies millions of people annually (and at the present time is feeding a very large per cent. of the European armies); these facts, I say, impose a great responsibility upon the packer. We employ physicians to cure people. Do we not realize that the packer is one of the greatest factors in preventative medicine? Do we not realize that upon the sanitary conditions of our plants depends the future success of our industry? So I say that the packer is obligated by the dictates of humanity to give close attention to sanitary measures.

In the second place, the packer has a responsibility toward his employees. In the centuries gone by the employer considered only the labor due him from the employee, and his efficiency of production. But the thought of the twentieth century is more humane. We as employers are realizing that the right does not only lie on our side to demand maximum production from our employees, but also that the right lies upon the side of the employee to demand of us the proper kind of working conditions and surroundings. Realizing this responsibility due the employee, can we afford not to be constantly studying the problem of sanitation?

In the third place, we have a responsibility toward the buyer, and by this I mean both the merchant and the ultimate consumer. Here I will add to what I have already said regarding the consumer the fact that generally speaking he has no way of knowing under what kind of conditions the products he uses have been prepared. Is it not here where confidence in the industry assumes an important factor? Does not this very lack of knowledge on the consumers' part obligate the packer to prepare his product under the best sanitary conditions within his power? The entire business fabric of the world rests upon the confidence that one man has in another. It is absolutely necessary for the welfare of the industry that the merchant feel he is receiving from the packer a clean and wholesome product. It stands to reason that we, as packers, cannot fulfil our responsibility toward the buyer, both merchant and ultimate consumer, unless we continually study the sanitary conditions in our plants and strive to improve them.

We have, in the fourth place, a responsibility to the future of the industry as a whole, and to the future of our individual businesses. The canning industry has gone forward with leaps and bounds. It is still doing so, and will continue to do so. There certainly is no doubt in the minds of anyone who will give the subject a moment's thought that in the very near future there will be a tremendous increase in the consumption of canned foods. It is, therefore, our responsibility to the industry to put out a product as near perfect as possible, so as to establish a confidence in the minds of the entire public in the high standard of our goods. It is the responsibility of each one of us to his own business that he keep his business on the upgrade constantly, so that he will be able to meet any new conditions that might arise. Therefore, our obligations to the future require us to continually study our problem of sanitation and cleanliness.

I have tried in these remarks to bring to our minds the need of carefully studying our responsibilities to the industry, and to constantly aim toward placing our business on an absolute sanitary basis.

It seems to me that there is hardly a step in the canning process where the question of sanitation does not enter. The boxes or containers in which the raw product is delivered to the factory, awaiting the process of canning, should be frequently and thoroughly washed.

Machinery should be washed so often that it will have no chance to become unsanitary. For this purpose a plentiful supply of water with sufficient pressure should be available, and the use of live steam cannot be too highly recommended.

Can it be doubted that the cleanliness of the blanchers, scalders and other like machinery is a prime requisite? It is sometimes the case that the flavor of an otherwise excellent product is lost in the process of blanching or scalding by reason of the fact that the water in the machine has not been changed as frequently as is necessary.

Of course, there is no need to bring to your attention the necessity for washing and sterilizing the cans, but there is possibly a need to emphasize the necessity for thoroughness in this connection.

The brine tanks should be emptied and cleaned every evening, or at least after each day's operation. The brine room above all should be kept clean and the containers should be protected from flies and dirt.

A precaution that should be taken is to recover the sugar barrels after taking sugar from them. It certainly is not pleasant to think of using sugar from a barrel to which the flies had access.

The broken skins and particles collecting on the filler cups and ledges should be frequently removed. If allowed to remain there long they will no doubt become unsanitary, and may possibly in this condition get into the cans.

A sanitary measure that is often overlooked, but one that is very important in its effect upon cleanliness as a whole, is the insistance that the female help in the picking and sorting rooms always appear neat and clean, clean aprons, clean finger-nails and neatly done hair. This is also true of the male help in the process room. Due to the time of the year in which the canning season falls and to the heat of the factory, the men perspire freely. Therefore, a frequent change of wearing apparel is almost a necessity.

It seems a very reasonable thing to say, not only from a standpoint of sanitation, but also from that of efficiency, that men should not be allowed to use tobacco in any form while at work in this department.

Another essential measure for sanitation in a canning factory is that the floors be kept clean. At least one man should be employed for this purpose. The floors should be frequently flushed with a strong stream of water to wash away the wastage and other unsanitary matter. This, of course, makes necessary the providing of proper drains for the disposal of the water.

Certainly no products of the smaller varieties after having been prepared, and then possibly fallen on the floor, should be canned.

Proper ventilation is another important factor pertaining to sanitation. I think we will all agree that there is nothing more sanitary than plenty of fresh air, and that there is nothing more unsanitary than old, foul air. If our buildings have not plenty of windows, additional windows should be placed in every available space. Saving money by failing to add this sanitary measure is uneconomical. The same is true pertaining to our lighting system by day or night. The lighting should be so arranged as to be conducive to the highest efficiency.

There seems to be a conception occasionally with some packers that the question of sanitation is one that pertains wholly to the factory, while the warehouse can be as unsanitary as possible. I wish to refute this mistaken idea. A sanitary warehouse has not only a beneficial effect upon the business as a whole in giving it a sanitary reputation among its customers and chance visitors.

Some warehouses, seemingly otherwise sanitary, while containing canned products confront one with a very disagreeable odor, which

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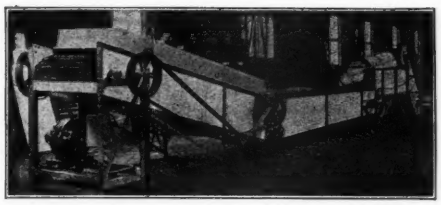

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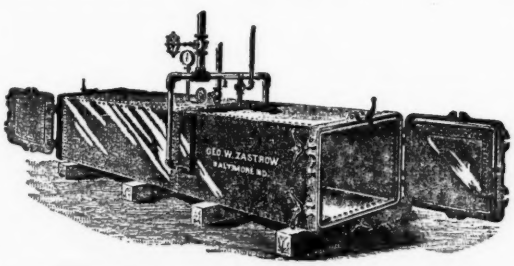

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without doubt is detrimental to the industry. It is my firm conviction that this odor is without doub due to the lack of sanitation in some step of the canning process.

At this time it might be well to mention something that is but indirectly sanitary, the need for neat, clean labeling of cans and stenciling of cases. Such neatness makes for confidence on the part of the public in the sanitary condition of the factory as a whole.

In considering the sanitary elements in the factory and warehouse we must not overlook the exterior of our plants. It has been frequently demonstrated that pools of water standing and stagnating is one of the worst of evils, for here are bred millions of flies, which make the sanitation of the inside very difficult. Therefore, any comprehensive plan of sanitation would demand a proper drainage of the premises.

A great many of our sanitary problems would be remedied if the officers of our companies, other than the managers or so-called superintendents, would familiarize themselves with the conditions as they exist at their plants, and see that the necessary rules are made and enforced. By so doing they would remove a portion of the burden from the factory superintendent, who in most cases is not sufficiently interested or cares little about these problems.

If we realize the importance of this subject, and try to solve it by the means mentioned, and similar ones, what will be the result?

In the first place our employees will be laboring amid clean, healthy surroundings conducive to health. Good health brings energy; clean surroundings produce interest in the work at hand; and we all know that interest plus energy spells efficiency.

In the second place, we will put out a better product! The increased efficiency of the employee makes for a better product. The product will be put up more economically, for sanitation will eliminate much of the waste, such as swells, usually caused by unsanitary conditions.

Probably the greatest result is the effect upon the public. This effect is twofold. There is the effect on their welfare of giving them a clean, wholesome, nutritious food, a benefit of which they may be unconscious, and the effect on the public of the knowledge that they are receiving a product which has been produced under absolute sanitary conditions. That is the effect that puts money in the pocket of the packer. That is the effect that spells his business success or failure in the years to come. That is the effect which means a flourishing industry with the confidence of the public.

THE VALUE OF PEA SILAGE IN FEEDING BEEF CATTLE.

By John Nieman.

After each canning season nearly every pea canning company finds itself with a considerable quantity of pea silage on hand, put up in either silo or stack. And the question naturally arises how to best utilize this by-product. The general practice in this state is to either sell the silage to the farmers or feed it to cattle or sheep. As our experience covers only the feeding of steers, I shall confine myself to this subject, and more particularly to our own practice.

While we sell some of the silease to the farmers, especially those who are growers of canning peas, the bulk of it is fed to steers; and we do this for two reasons, viz., to get fertilizer for our farms and incidentally to make a profit on the feeding; it also puts us in position to use to the best advantage the hay and corn which we are obliged to grow on our lands in rotation with other crops, since growing peas on the same ground one year after another has not been a success with us, owing to soil infection with pea blight.

We usually buy our cattle in the stock yards along in October, and ranging in weight from 700 to 900 pounds, and feed them in an open yard connected with sheds for shelter.

The first four months we give them two feeds of pea silage per day (morning and noon), and a meal of clover hay or dry corn stalks in the evening, with plenty of fresh running water and salt accessible at all times. Along about the first of March we commence feeding them some ground corn mixed with cotton seed meal, starting with about four pounds per head per day, and increasing this ration to sixteen pounds daily during a period of about six weeks, and continuing at this rate to the end of the feeding period, the latter part of May or first part of June, depending somewhat on the size of our corn pile, most of which is of our own growing. The quantity of pea silage fed daily depends more or less upon the appetite of the eaters. When they first arrive they usually do not care much for the silage, as they are not used to this kind of feed, but they soon develop a liking for the same and eat considerable, probably in the neighborhood of forty or fifty pounds a head per day until the time when they get full rations of corn meal, when they will get proportionately less silage.

At the end of the feeding period, when the steers are shipped back to the market, the canner has two things to show as the result of his feeding operations, viz., a good sized manure pile and either a profit or a loss on the money invested. Roughly speaking, the manure pile is worth at least as much as the silage fed, and whether the account outside of this shows a loss or a gain, and how much, depends largely upon the condition of the market when they are bought and when they are sold. Seven hundred to nine hundred pound steers during an eight months feeding period as outlined above should gain on the average 300 pounds each in weight, which under normal conditions will pay for the feed used, besides the silage, and also the labor of feeding them, interest on the money invested and other expenses, leaving the difference between the purchase price and the price sold at, figured on the original weight, as the margin of profit. We find in our experience that when feed in general is high the difference between the feeder price and the fat cattle price is greater than when feed is cheap, from which it would follow that when feed is high the chances for making a profit are at least as good, if not better, than when the price on feed is low.

As we have under discussion the general subject of "Maximum Production," not only of canning peas but other crops, all of which are in great demand at the present time, I wish to emphasize once more the value and importance of the by-product of the cattle feeding, viz., the manure pile, without which successful farming in our state is not very well possible. In connection with our canning business we found it necessary and desirable to own and farm considerable land, and in acquiring this land it has been our experience that about the only farms we could buy at a reasonable price were those that were more or less run down in soil fertility, so as to make them unprofitable to their owners. We grew peas on these lands for several years in succession until the pea blight got into the soil and compelled us to discontinue this practice, and we commenced growing grain, hay and corn instead. We then found that one crop of grain was about all we could grow successfully after the peas without fertilizer, and we then came to the conclusion that the cheapest and most practical way to get this fertilizer was to feed the pea silage to cattle instead of selling all of it at a nominal price; and we have profited by it in the very much larger yields of crops, besides the direct gain incident to the feeding operation. Furthermore, it is no doubt apparent that to own land in good physical condition at this time, when it is extremely difficult to get farmers to sign growing contracts for canning peas, is a valuable asset to a canning business.

JOHN F. NIEMAN, Thiensville, Wis.

CANNERY ACCOUNTING.

By Albert T. Bacon.

The subject of accounting, in its relation to maximum production, brings us to a consideration of the simplest methods of recording factory operations with a minimum of labor.

SYSTEM.—I introduce the word with some temerity. In the minds of some red-blooded operating men it is a synonym for red tape —for circumlocution. System is sometimes classed with the occult and the mysterious. "I don't understand anything about bookkeeping," is uttered with the implication "I don't need to know, and, what is more, I dont' want to learn." The men who devote their lives and energies to making history are not disposed to divert much of their thought or time to recording it, for that is what accounting is—it is recording history rather than making it. It is recording the making of money rather than actually making money.

System is not occultism. It is not circumlocution; rather it is directness; it is simply order. And the absence of SYSTEM is CHAOS.

A manufacturer who has been in the habit of recording operating costs in orderly fashion, and has done it consistently through a period of years, doesn't content himself with saying trat everything is higher since the war. He knows what is higher. he knows just how much higher it is—he knows by what gradations it has reached the present level. And, what's more, he knows the total dollars and cents increase in his costs, due to such increase.

Paper has gone up in price tremendously, but that means less to canners than it does to mail-order houses or other large users of paper. And, of course, the per cent. increase in the price of tin plate means more to a canner than it does to a printer.

And so "system" is simply the method (and simple method) by which the effect of variations in costs and income may be studied in detail and in total, indicating to the management the necessity for changing the method of manufacture, or raising the selling price.And you can study these things, you can know them, know them from your own experience, know them for certain, and know them before the goods are sold (though this is not so generally true here as among other manufacturers).

I have spoken only of prices of materials or supplies going into the manufactured product. System will also afford the means for detecting wastefulness of methods, economic waste, inefficiency and downright dishonesty.

Now as to other items than cash, disbursements which influence cost. Your cash book for 1917 doesn't record all your costs for 1917. *Out of pocket expenses or expenditures don't begin to cover all your costs.*

What about interest on investment?

What about your own services (if you have omitted to pay yourself a reasonable salary)?

What about the loss you didn't have this year through using experimental machinery, through crop failure or extraordinary spoilage of fire? These experiences in turn are the experiences of all canners.

And then what about your plant? Maybe it was put up ten years ago at a cost of $100,000. It has been partly renewed since, and must be wholly renewed or modernized, each part in turn, within relatively few years. Thirty to eighty per cent. of your original capital investment of $100,000 has already contributed to the cost of canned foods manufactured. Did you include it as cost? The remaining 70 to 20 per cent. will contribute to the cost of canned foods soon to be manufactured. Will you include this as cost? In other words, your permanent investment is not permanent, but is a deferred charge against manufacturing cost.

The Coal Operators' Association recommend to their members that five cents or more (the amounts vary with different associations) be added to the cost of every ton of coal raised to cover the loss, damage, expense, etc., due to squeeze, collapse, flood or other extraordinary loss, any one or more of which may occur during a period of years. Said additional cost is set us as a reserve, and this may with propriety be built up to a very large reserve, against which may be charged the loss occasioned by these possibilities if and when they become actualities. And the loss has been provided for years before, possibly, instead of levying on the long-suffering stockholders after the disaster. Wise provision, isn't it?

Know your costs, and use your knowledge in an effort to keep down costs. That doesn't mean keep the 1918 costs below the 1917, but it does mean 1918 costs below what they would have been without an intelligent application of 1917 experience.

Cost in relation to Government supervision of the industry. Uncle Sam is kindly disposed towards industry. The Government is willing you should make a fair profit on your investment, and will allow deductions for all reasonable contingnices and risks before beginning to reckon profits.

Mr. Ames said yesterday, in addressing you on the seed factor: "If we can learn to make two vines grow where one grew before, and lessen the chances of crop failure, we cannot learn any too soon."

Applying this principle to the topic under discussion: If you can produce one more can of peas with your dollar by any intelligent understanding of past performances you cannot learn how too son. Accounting bears vitally on maximum production.

POSSIBILITIES OF GROWING SEED PEAS IN WISCONSIN.

Prof. E. J. Delwiche, of the University of Wisconsin.

The question as to whether seed peas for canning factories can be grown in Wisconsin can readily be answered in the affirmative. The fact that this state is the largest producer of dry peas answers the question. Seed peas have been grown under contract for over 25 years, at least. What I wish to call attention to is the possibility of extending the growing of seed peas to the newer sections of the northern part.

We began experimenting with canning peas at Ashland in 1908. The work has been from the two standpoints of improvement or breeding and of culture.

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We Excel in New and Original Designs
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ROCHESTER, N. Y.

Westinghouse Motors

For Canning Plants

Since in war food is as great a necessity as shrapnel, you should employ wherever possible, better and faster methods.

The strain of increased production may be relieved and

YOUR OUTPUT INCREASED AND OPERATING COSTS LOWERED

by the use of Westinghouse Motor Drive. It is efficient and dependable and insures maximum economy and ease of control.

Westinghouse Motors can be depended upon to do their work year in and year out with no attention practically and with minimum maintenance expense.

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In the breeding work the object has been towards developing pure line strains and possibly new varieties better adapted to local needs. We have tested over 500 pure lines, and have produced several times that number from crosses. Only a very few have been retained for further testing. The present season we produced about 100 bushels of a single pure line, a strain of Horsford Market Garden. This strain, which was developed at the Ashland Station, has given satisfactory results under varying conditions. In 1915 it yielded over 20 bushels per acre with a thin stand, in 1916 it yielded over 25 bushels and in 1917 from 20 to 30 bushels for different plots. A farmer in Brown county grew five acres of this variety and harvested over 75 bushels. Another farmer in Kewaunee is growing the same strain. Other strains of Horsford and Alaska have been grown at the Ashland, Superior, Marshfield and Conrath Stations. At Superior the yield was 20 bushels in 1916 and 23 bushels in 1917. The strains grown at Marshfield yielded from 10 to 20 bushels.

At the Ashland Station we had approximately 100 strains and varieties growing in 1917. One of the newer varieties just put on increase plots deserves particular mention. It yielded at the rate of 35 bushels per acre. This was a dwarf variety which was selected from a cross between French June and Horsford, and ranges in height from ten to eighteen inches. This variety, we think, will be adapted to localities where peas grow very rank, as for instance the loam soils of Central Wisconsin. We expect to test it thoroughly under those conditions.

The cultural side of seed pea production should be emphasized. That seed peas can be grown with profit is undeniable. Nevertheless, it is true that there have been many failures in growing. A few years ago a Michigan seed firm attempted the growing of seed peas in Northern Wisconsin, but results were rather unsatisfactory. Let us look into the causes.

In the first place, the crop was sown on freshly turned tough sod not properly plowed. Grass came up between the furrows and partly choked up the peas. The available fertility of the soil was low, and without inoculation the peas could not furnish their own nitrogen supply. In most cases the crop was sown too late. Unless the land is in the best of condition peas for seed should be sown not much later than May 15. On rich soil properly prepared we have good yields by sowing late in May.

Another fruitful cause of failure is lack of proper attention to drainage. Our heavy clays and loams should be plowed in lands about two rods in width, leaving an open "dead" furrow to carry away surface water during heavy rains. Proper depth of seeding is another essential. Peas should be well covered so rains will not uncover the seed. On the heavy clays too deep planting is also injurious.

Generally speaking, it is best to sow on fall plowed land. Spring plowing, as a rule, does not pulverize properly, but the ground remains lumpy and hard. Under such conditions thrifty growth is not the rule. Besides the harvesting of the crop is rendered much more difficult.

We have sown canning peas after cultivated crops and on clover sod with equally good results. Soil low in humus is greatly benefited by a top dressing of farm manure.

New land which has never grown peas is usually deficient in the nitrogen gathering bacteria. These are essential to the proper development of the pea crop, particularly if the soil is low in humus and nitrogen content. Under such conditions inoculation should be supplied.

Regarding seed, our experiments show that the home grown and home bred product is fully equal to the western grown seed. We have had bigger yields from our own stock than from seed grown in Montana, Colorado and Australia.

Good seed peas can be grown in Wisconsin if reasonable care is used in seed collection, time of seeding, proper rotation, soil preparation and fertilization.

PEA GRADING.

By W. L. Shroder.

The value of grading peas cannot be overestimated. The adoption of uniform standards will benefit the consumer and manufacturer. It will give the consumer exact information as to the quality of the contents of the can, and will enable the packer to produce canned peas which will put competition on a fair basis.

The quality of canned peas has improved from season to season by using better strains of seed and improved methods of canning. The consumption of canned peas has kept pace with the improvement of quality, due to the fact of assuring the public that when purchasing canned peas they are purchasing food that is palatable and wholesome. Men who have observed the consumption of canned peas from year to year predict that the time is not far distant when twenty million cases will be consumed yearly, providing the present standards are maintained and improved on.

To do this we must get packers to can uniform peas of the various grades and quality. The method we are using in grading peas can be improved by dividing our Association into groups and meeting in some central point in each group and asking the factories in each group to bring samples and see that the processor and men in charge of the field work are present and watch the grading.

In this manner suggestions can be made to them which will produce uniform peas of all grades and quality.

REPORT OF RESOLUTIONS COMMITTEE.

Whereas, It has pleased an all-wise Providence to take from our midst our fellow-members and co-workers, A. G. Cambiar and A. G. Tamm; and

Whereas, By their deaths the Association loses two valuable members, and the communities in which they resided valuable citizens; and

Whereas, By their sterling qualities they have endeared themselves in the hearts of us all; therefore, be it

Resolved, By the members of the Wisconsin Pea Packers' Association, in convention assembled, that we deeply deplore their untimely deaths, and that our heartfelt sympathies go out to their bereaved families in this dark hour of their affliction, and furthermore be it

Resolved, That this resolution be spread upon the minutes of the books of this Association and the Secretary be instructed to send a copy of it to the families of the departed.

L. E. WEDERTZ,
H. M. WOLLUM,
H. F. SCHEMMEL,
Committee.

Whereas, By the unchanged law of nature it has pleased the Almighty God, in His infinite wisdom, to remove from our midst E. F. Casey, one of our most highly respected and esteemed members of the Wisconsin Pea Packers' Association, and a man whose life was marked by a high purpose, be it

Resolved, By the members in Convention assembled that we deeply deplore the death of Mr. E. F. Casey, and that the Secretary be directed to enter this expression of regret and sorrow upon the minutes of the Association, and that a copy hereof be transmitted to the family of the deceased.

L. E. WEDERTZ,
H. M. WOLLUM,
H. F. SCHEMMEL,
Committee.

Whereas, An all wise Providence in His infinite wisdom has removed from our midst Daniel G. Trench, John S. Hughes, and W. C. Langbridge, who were closely associated with us in our work and

Whereas, By their untimely deaths our Association loses the benefits of their wise counsel and cheerful presence at our gatherings, and the communities in which they resided true and upright citizens, who will long be mourned by all who knew them; therefore be it

Resolved, By the members of the Wisconsin Pea Packers' Association in convention assembled, that we deeply deplore their untimely deaths, and that we extend to the bereaved family of the deceased our sympathy in this their hour of sad affliction; and furthermore

Resolved, That this resolution be spread upon the minutes of the books of this Association and the Secretary be instructed to send a copy of it to each of the stricken families.

L. E. WEDERTZ,
H. M. WOLLUM,
H. F. SCHEMMEL,
Committee.

Whereas, At the time of this Convention assembled our country is engaged in a war which threatens the destruction of the principles of democracy, sacred to the hearts of our people; and

Whereas, The winning of this war means the protection of human rights in foreign lands, the establiishment of justice in the place of oppression, the granting of equal rights in the place of autocracy; and

Whereas, Our Government needs the co-operation of our members and the best that is in us to carry on its extensive plans.

Be it Resolved, That the members of the Wisconsin Pea Packers' Association pledge their unqualified loyalty and support to our Government and its officers with their resources and services toward the end that the war may be brought to a speedy and successful close.

R. M. FLETCHER,
J. A. HAGEMANN,
ROYAL F. CLARK,
Committee.

Whereas, The demands upon our industry caused by the war have grown and will increasingly grow; and

Whereas, It will take all the foresight which combined effort can master to take care of all the elements which are prominent factors in production,

Be it Resolved, That the Wisconsin Pea Packers' Association commend the activity of the officers of the N. C. A. in the matter, and the Wisconsin pea packers, through its organization, stand ready to assist whenever possible in carrying out the big program.

Whereas, The U. S. Food Administration favored us with the talent of Alexander Thompson in a stirring patriotic address,

Be it Resolved, That the Wisconsin Pea Packers' Association, in convention assembled, expresses its appreciation of his able address, which appreciation will receive further expression by our future efforts to do our bit to co-operate with the Food Commission.

Whereas, The members of the Allied Industries, the Chisholm-Scott Company and the Merchants and Manufacturers' Association of Milwaukee, have again contributed to the pleasures and success of the Annual Meeting of the Wisconsin Pea Packers' Association;

Be it Resolved, That the expressions of appreciation as uttered by our President in his address represent feelingly the sentiments of this convention, and are herewith incorporated.

Some duties of the Resolution Committee are especially pleasing and we welcome the opportunity of presenting the following agreeable and undeniable facts:

Whereas, Mr. A. T. Hipke, our retiring President, esteemed and beloved by all, has so faithfully and splendidly performed the many manifold and trying duties of his office, not only during the preliminary organization but on down to the present time, and has done so much toward bringing the Association up to its present high co-operative success; and

Whereas, In association with your efficient body of directors, nearly all of whom are still in your immediate counsels, has worked so untiringly in your behalf, all a labor of love and duty.

Be it therefore Resolved, That we, as an Association, place prominently on record our obligation to Mr. A. T. Hipke and directors, and that this resolution be ordered spread on the minutes and become an indelible part of th records. Also that a copy of this rsolution be forwarded to Mr. Hipke and each of the directors, as a deserved tribute of praise, love and esteem, all expressed in the following: "Well done, thou good and faithful servant."

The opening session of the 66th Semi-Annual Convention of the Western Canners' Association was convened at 10:10 A. M., November 16, 1917, in the Crystal Room of the Sherman Hotel, Chicago, with the president of the Association, Mr. Walter J. Sears, of Chillicothe, Ohio, presiding.

The President: The convention will please come to order
Mr. Nott, I will appoint you as sergeant-at-arms.

The first number on the program is the president's address:

THE WORLD WAR—A CATACLYSM.

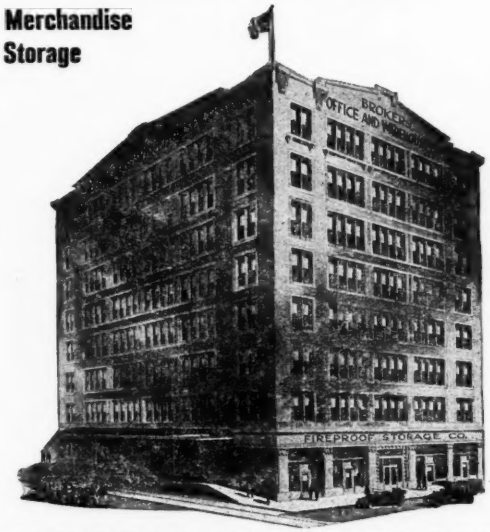
By Presidentt W. J. Sears

The world war is something more than a struggle between contending armies; something more even than a never ending series of bloody battles. It is a world cataclysm, which has dislocated the social, intellectual, religious and economic life and status of every civilized nation. Indeed, its final results will prove to be something more than a dislocation.

Nothing has been so indubitably settled and confirmed by the scientific research of modern times, as the postulates and conclusions of evolution, the central thought of which is that all present human

SAFETY FIRST

Merchandise Storage



This New Combination Merchandise Storage and Office Building is not semi-fireproof, but **is fireproof.** Insurance on merchandise is 15 3/10c. Every floor steam heated.

Warehouse located within five minutes walk of all freight depots, and at the door of the richest agricultural territory on earth.

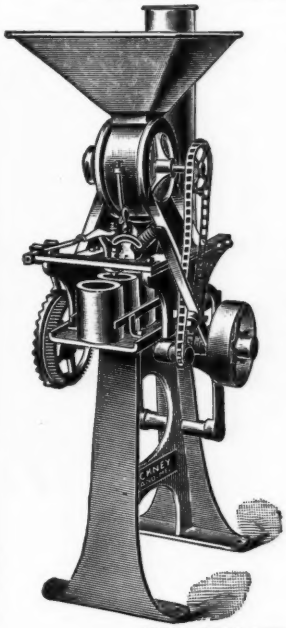
We own and operate our own building, and are also bonded to the state. Switching charges absorbed by carrier. We solicit your Kansas City business on the basis of safety and service.

BROKERS OFFICE & WAREHOUSE COMPANY

"Brokers' Building" KANSAS CITY, MISSOURI

STICKNEY BEAN and PEA FILLER

FOR No. 3 CANS AND UNDER



Price - $125.00

Capacity Daily 10,000 to 15,000 as per size of Bean, Can and Stud Hole

Syrup Attachment Extra - $50.00

These Machines are in successful use on and other **JAMS** goods that can flow by gravity and shaken into the can

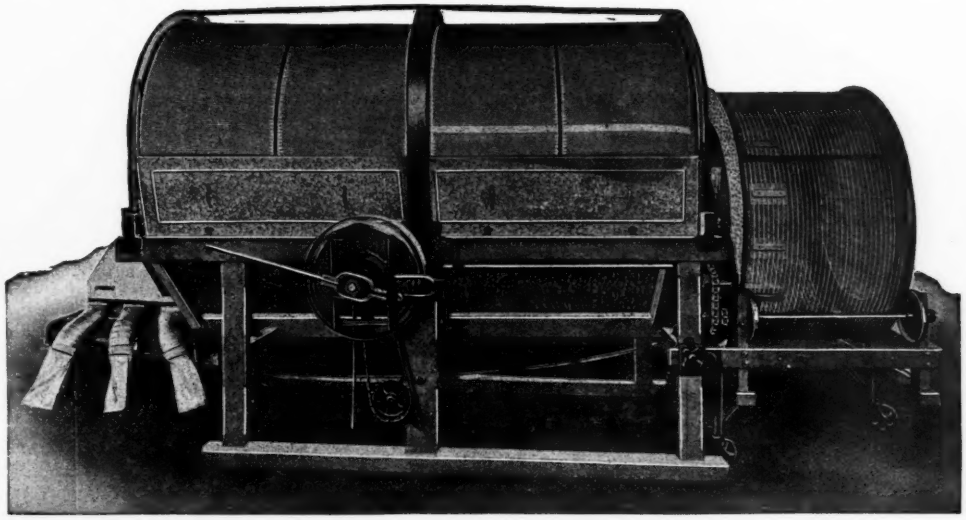
HENRY R. STICKNEY

PORTLAND, ME.

NEW ENGLAND AGENT FOR

SPRAGUE CANNING MACHINERY CO.

IT TAKES THE BIG PEAS OUT FIRST



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The above is an illustration of our New Nested Pea Grader, which has large capacity, occupies small floor space, does perfect grading—and in a short time will save its cost in the increased yield of the small size peas, which ordinarily are mixed in with the larger sizes when graded on any other type of machine

THE SINCLAIR-SCOTT COMPANY

MANUFACTURERS OF CANNING HOUSE MACHINERY

Wells & Patapsco Streets, **BALTIMORE, MD.**

life is the slow but sure growth of the past; that the civilization of the 20th century has resulted from centuries of toil and struggle, of devotion and self denial, reaching back to the very dawn of recorded history; the principles of morality, the laws of justice, the institutions of home, church and government, the instrumentalities of trade and commerce, the rights of human life, liberty, and pursuit of happiness—none of these have come down out of heaven as a gift of some inscrutible power, but all of them have come up through the struggling races of men, to uplift and adorn them.

How have these things come Sometimes by the agencies of war, but usually by the arts of peace. Sometimes this race or the other has resorted to force of arms, to win its freedom from vassalage or oppression. But never before have all the dominant civilized races thrown themselves at the same time into the vortex of bloody conflict, as we see them now in this stupendous world-wide struggle. It is not for us or for this generation to grasp or understand the full meaning and import of this titanic and epochal conflict in respect to the civilization of the races themselves. We may if we will, while yet the battle clouds blind our vision, think our way to one or two fundamental truths.

Some Aspects of the War.

(1) The war itself is a vivid and overpowering demonstration of that life principle which Darwin and Wallace first discovered, to which we have just referred, that there is and has been in all life, human and natural, organic and inorganic, a ceaseless struggle for the survival of the fittest—the fittest in mind and muscle, in courage, zeal, insight, perseverance, strength. And this seems true in spite of the fact that both of these scientists held the theory that when the human races reached the stage of civilization this law ceased to operate in all its rigid power; that the kindlier and nobler qualities came to control the activities of men, thus checking the strug gle of the strongest for the sake of the less strong. In the presence of this war, what is this generous theory worth?| Have not the civilized races trampled under foot the impulse to struggle for the life of others, which is the ministry of love, and brutally resorted to a struggle of self-interest in which quite clearly the strongest and fittest will survive? As all wars have been won by the side which had the best and strongest battalions, it follows that truth and righteousness may not crown the banners of the victors. Thus this struggle for racial and national survival may result, not in evolutionary or any other sort of progress but in retrogression, reaction and arrested development.

(2) This brings us to the second truth which comes out of this war. Whatever the final aspect of the war as it affects the moral, religious and institutional life of the races, its immediate effect for the next 25 years will be radical and revolutionary. It will inevitably change, redirect and revalue our ideals of life, our processes of thinking, our rules of conduct, our laws of commerce, our customs of trading, our methods of manufacture. For this country this upturning will mean that the provincial and isolated life which we have enjoyed and admired for more than a century will be swept away.| We are to plunge, indeed, we have already, into the world struggle, in war as well as in peace; never again to retract our steps, to survive or to perish, as an independent nation, by the measures of our wit, our brains, our muscle and our pluck.

(3) An immediate effect of the war, in its relation to the vast field of trade and industry, have been to utterly destroy the economic law of supply and demand. This is especially true of all food products in relation to which the demand has so far exceeded the supply, that an artificial condition has resulted. The theory of this law is that a rising high market of any particular product will stimulate the production of such product, bring fresh supplies to the market, and thus automatically reduce the price. If for any cause, a high and advancing market does not have this effect, then the law of trade is not operating and the result is a condition which works a hardship upon the buyers and demands and justifies government control and regulation.

War's Economic Effect.

For the purposes of this paper, I must confine myself to a single aspect of the war, as it now and must hereafter effect this nation, to wit: Its economic effect upon human foods.

Our first observation is that the war has reduced the visible and actual food supply. This has come about:

(1) Forty million men have been called to the armies to render military service.

(2) Thousands of acres of tillable land have been overrun and destroyed for the purposes of crop production.

(3) Tillable lands have suffered in yield for lack of fertilizers.

(4) Lack of labor is reducing the number of acres devoted to food crops.

Our second observation is that the world is now consuming more staple food than ever before, in spite of the losses suffered by the armies in the field. This is due to a profound biological and physiological cause, to wie: Men engaged in the hard and severe tasks and labors of soldiers and sailors demand for their normal life forces a large percentage of staple foods, such as meats, vegetables, bread, fats, milk and sugar. Taking forty million men, half of whom in civil life were employed in offices and shops and factories, while a goodly number were not employed at labor, but lived idle and effeminate lives, it stands to reason that when these men are called to the strenuous life of the camp and trenches, they must be nourished with the essential food rations. These are limited to the food which the races through the centuries of their development have come to need; or rather to the foods which biologically their human natures require. Man being the only animal whose life functions demand both meat and vegetables, the present crisis has placed a tremendous demand upon the essential foods found in the world.

(3) Our third observation is that an indirect if not direct result of our present economic status in respect to foods is that there is an insistent demand for a balanced food diet or ration. This is having a vital and startling effect upon all essential food supplies. The scientific feeding of 40,000,000 men in the armies and navies must necessarily be reflected in the food supply of the civil populations. The scientific principles of food chemistry or the laws of biology in relation to human sustenance, not universally appreciated before the war, are now the common knowledge of millions of housewives and housekeepers. There is, therefore, an intelligent demand for the correct dietary of proteins, fats and carbohydrates. Thus, take sugar, the largest producer of carbohydrates, when the grocer refuses to sell the housewife all the sugar she desires, she comes up with a shock to learn that this country has never produced all the sugar which it has annually consumed, being dependent for some million and a half tons upon Germany, Austria and Holland. She finds further that the United States and her Allies are now short of their present needs more than 500,000,000 bushels of wheat. Thus, she must turn to other heat producing foods. When this demand and need is multiplied by 25,000,000 homes, we can get some idea of the economic effect of the present food shortage upon all the necessary and essential staple products.

Staple Foods and Their Value.

Let us consider for a moment the effect of the war upon the present food supply in relation to that part of the canning industry which is devoted to conserving perishable vegetables, such as corn, peas and tomatoes.

(1) The first effect is upon the origin and source of these foods; the farm lands and those who own and operate them.

Now, we cannot think of these three staple canned foods without also thinking at least of two other staple farm products—wheat and field corn. As these two products are required as foods by both man and animals, in a vastly greater quantity than the canned staples, it follows that the value of the canned staples is determined largely by the value of field corn and wheat. To learn the value of these two products, the course of reasoning is simple. The human race would die of starvation without both or either of them, without field corn our meat supplies, beef, pork and mutton would soon disappear; without wheat the armies would cease fighting and turn to pillage and anarchy. Therefore, the value in this country of those two essential foods must determine the value of the canned staples, not quite so essential to life, but equally important to a well balanced and health giving diet.

What is the situation in this country today? The Government has placed an arbitrary value upon wheat and indirectly by fixing the value of pork, has determined the market price of field corn. Thus for next year, and possibly for a longer period, the first cost of the three canned foods has been determined. The canner must in consequence agree to pay the farmer such a price for these staples as will show him a net return equal to the same amount of land devoted to the growing of wheat and field corn. Otherwise, the farmer will follow the dictates of self-interest, and devote all his land to growing the basic staples, whose value is now known to him.

In passing, let me say that these known values of wheat and field corn will show the farmer a handsome return on his labor and investment. Based upon the prices heretofore prevailing for the canned food staples, the canner will be compelled to advance these prices very substantially if he is to place these staples upon the same level of value as wheat and field corn.

While the prices of the essential food staples are soon will be fixed, thus giving to the market a certain stability, there is still another factor which will greatly effect their production. This is the shortage of labor, not only in the factory, but on the farm. The direct result of this shortage will be to lead the farmer to turn away from every product the growing of which requires a large amount of labor; devoting his land to the products which can be produced with the minimum amount of labor. Therefore, of the three staples which we are considering, we may look for a decreased acreage next year on tomatoes and on other vegetables like string beans and beets, which require for their production more labor than does sweet corn or peas.

(2) As to labor, we will find the same economic effect in our factories. The canner will be compelled to limit his production of the products which will require an unusual amount of labor, turning to those which are handled largely by mechanical processes.

(3) The world war has not only produced a shortage of foods and labor but also a shortage of other materials. In our industry, the essential materials are, besides the green farm products, seeds, cans boxes, labels, plant machinery, mill supplies and equipment. The shortage which now exists as to some of these materials is not an actual shortage but a visible shortage due to a curtailed production which in turn is due to a lack of labor and basic supplies required in the processes of production.

As to seeds, there seems to be a very marked shortage on several of the staple products, and has been in fact for the past two years. It is a matter of congratulation that our National Association has taken vigorous measures in co-operation with the Food Administration to conserve the seed supply and to regulate the market values. We would, however, follow up this action by considering a constructive program of co-operative effort between the seedsmen and canners, guided by the Federal Government, whereby the growing of the staple seeds would be intelligently controlled, first as to the supply and, second, as to the kinds and strains of the several varieties grown. It seems unnecessary to support with extended argument a proposition so simple in its relation to the canning industry, and to the food supply. We have too long neglected the basic and primary factor in our industry, the right conservation of seed stocks. Upon them depends both the quantity and quality of the product which we desire to produce. The important matter should not be left to the unintelligent self interest of a competitive market among seedsmen, however worthy their pursoses may be. What is needed in this case is intelligent self-interest, plus a well-considered program, based upon the need of the food supply, practical experience and scientific principles.

As to the other essential materials such as cans and lumber, we should, pending the duration of the war, expect the National Government to co-operate with us in securing our necessary requirements. To this end the industry should be advised by a careful survey of the present outnut of the mines, forests and mills, early next year, as to the quantities of these products which will be available for our industry. There should be also some fair regulation of the cost of these materials, since the world of trade, no longer recognized as a directing force, the law of supply and demand.

Effect Upon Distribution.

The war has not only vitally affected the processes of production, but also the methods of distribution. The scarcity of the green products, their increasing cost, the shortage of labor and materials, must inevitably influence the canners in their policy of selling finished goods.

Shall they continue the practice of selling their output under the terms and conditions of future contracts? If they are willing to profit by experience, they will turn to the year which is just closing and seek to learn its lessons. Those lessons are writ large and red upon the debit side of the ledger. Notwithstanding that the world was at war, with every indication that this country must sooner or later be involved, the force of trade usage was so strong that the canners last January offered their goods of 1917 packing and entered into contracts for future delivery. These contracts were accepted and signed months before the canner knew the primary costs of manufacture. In April following this country entered the war as the enemy of Germany. In a few weeks it was evident that the cost sheets which formed the basis for the selling prices were purely theoretical and imaginary, themselves based upon tradition and not upon facts. By packing time it was found that every factor of cost had developed a startlingly heavy increase. Contracts covering materials, green and

Last year **we** knew all about **The Sanitary Can with The Sanitary Gasket.**

This year **you** know all about **The Sanitary Can with The Sanitary Gasket.**

AMERICAN CAN COMPANY

otherwise, were no longer binding as legal instruments of obligation between buyer and seller, the sellers of cans, coal, box lumber, green products setting them aside without much compunction, often, it is true, in good faith, with the excuse that the war had developed exigencies which were beyond the seller's control. In addition to these tribulations the growing crops with the exception of peas in some localities, were generally poor and disappointing in yield. I need not continue the depressing story. The gist of it is that the canners who in January contracted to deliver their staple products in the fall fulfilled their contracts either at a loss or without much, if any, profit.

In the light of this experience it does not seem probable or possible that the canners would care to repeat it next year. Fortunately, the Food Administrator has spoken a note of caution and warning. He has directed that none of the leading staple products shall be offered or contracted for prior to February 1st, 1918. My only regret is that he did not set this date forward to May 1st for peas, July 1st for corn and September 1st for tomatoes. Not until these dates shall we have completed our contracts with the farmers and ascertained the scale of wages which we will need to make to man our plants. All of which is based upon this syllogism of all successful manufacturers, to wit: The selling price is the cost plus a profit; all the elements of cost must be known to make the selling price; a fair profit cannot be found unless based upon the true cost.

Further, the Food Administrator has wisely provided that no canner shall contract to deliver in excess of 75 per cent. of his acreage, a limitation which will make far more conservative sales and more certain deliveries.

It was inevitable that as a result of the war this country would be forced to the policy of national food control, since the war had broken down the entire fabric of the world's trade and industry. As I have already pointed out, the laws of commercial exchange had become void and of no effect. The free play of economic forces was no longer possible. The demand for life-giving foods and other needful products so greatly exceeded the supply that all values became artificial and excessive. There could be but one alternative, the several nations by arbitrary but intelligent methods were driven to assume control of all industrial activities, the purpose of which control, as far as foods are concerned, is to prevent waste, stimulate thrift and secure and equitable division of the supply.

The present policy of the Government to regulate by a system of licenses the production and distribution of canned as well as other foods is a wise, statesmanlike and necessary measure of self-defense in the struggle which we are now waging against a resourceful enemy. It is our plain and unavoidable duty to support this measure and to co-operate fully and loyally with the Food Administration in carrying it out.

In this connection it is fortunate for us, as well as for the country, that Mr. Hoover has been able to turn for valuable aid to the National Canners 'Association, which through President Burden, Secretary Gorrell and its War Service Council has been and is now rendering the highest type of service to the nation.

Associated Efforts.

The problems of the year have revealed and developed the need of associated effort among all canners. The State Associations have continued strong and active. The National Association, through its capable executives, has risen splendidly to the unusual and exacting problems which the war has entailed. The Western Association has realized for itself a limited but highly important place for the serious consideration of the problems of the hour. It has set for itself a definite program of constructive thinking and acting. This involves the study of the following subjects:

1, Seed Supply; 2, Soil Fertility; 3, Factory Efficiency and Sanitation; 4, Raw Materials; 5, Sales and Costs; 6, Publicity; 7, Statistics as to Crops, Pack, etc.

The study of these subjects has been placed in the hands of able committees, whose reports of their work at this Convention will, I am sure, prove helpful to all our members. On August 4th these committees held a conference in Chicago and carefully laid out the work for the year. Among other things, canned foods exhibits were decided upon, and later were given at the state fairs in Ohio, Indiana, Illinois and Iowa. These exhibits were in charge of Secretary Shook and Marie D. Peffer, supported loyally by the state associations of each state where they were held.

The one thought which came from these food exhibits was that home canning during the past summer had been overdone. It was found that the practice had not been uniformly successful, thus reinforcing the value of commercial canning as the proper economic process of conservation.

But perhaps the most unfavorable result of the demand and practice of home canning was the effect upon the markets for green products. This developed, especially in the cities, where the housewives were forced to go to the produce markets for these products. This naturally stimulated the demand and caused a very high price to prevail for all products desired for home canning. In turn this had a marked effect upon the farmers who had contracts with the canner, many of whom were tempted to take their products to the market instead of taking them to the canner. This experience has been the question in the minds of careful observers—whether the output of canned foods was really very greatly increased, and whether during the coming year it will not be better for the country as a whole to leave their conservation to the canners rather than seek to develop the homes, an effort that has not proved very successful, and which must certainly result in a higher market for the raw products, the output of which are limited by certain natural conditions.

As to some of the subjects of vital concern which press upon us for consideration, I prefer to leave them in the hands of the several committees for report later in convention, when I trust we may have full and informing discussion. I wish to take time to speak only of one or two matters. As to the effort urged at the last meeting to secure the aid and co-operation of the Agricultural Experiment Stations in the Western States, in a program of experimentation covering canned food crops, I am pleased to report that the response which we have received from the stations and universities gives promise that this work will be begun at an early date. As an earnest of this new work, I am pleased to announce that Dr. Hopkins, of the University of Illinois, the greatest living authority on soil conservation, will address this convention on this important subject.

As to legislation, I shall let the Secretary report more fully upon this matter, except that I desire to say that in some of the states the laws regulating the sanitation of canning plants are not sufficiently clear or severe in their penalties. The State authorities should be given the same power now lodged in the Federal government to seize, condemn and destroy canned foods which have been packed from putrid and decaying products, or in a plant which is so unsanitary as to make the food unfit for human consumption. I am surprised to find that in some of the states offenses such as I have described are punished by levying a small fine, permitting the goods to be sold, as if the payment of the fine would purify them. Certainly the laws of the several states should not only be effective, but they should also be uniform in character, and all should provide for sanitary inspection.

I am prompted to speak briefly on one subject which should be given more serious consideration. I refer here to the by-products of our industry. I am glad to state that the Federal government, in its Department of Agriculture, has begun the investigation of such products as beet peelings, pumpkin seed, corn cobs and husks, pea vines, etc., with the hope that some commercial value may be obtained from them. At a time when waste is condemned and conserving is needed we should encourage this effort. I am also pleased to report that Professor Baker, of the Laboratories of the American Can Co., has begun the study of some of these by-products.

Agreeable to the sentiment expressed, by the members at the last meeting in April, the Executive Committee employed Mr. Shook as secretary-treasurer, agreeing to pay him $200.00 per month, out of which compensation he was to furnish his office and stenographer. This agreement was made binding until November 1st. I regret to report that the income of the Association has not been sufficient to meet this obligation. The deficit, however, is to be taken care of by the Executive Committee, if not otherwise provided. Mr. Shook's services have been invaluable, and I need not add that his compensation is wholly inadequate. But if he is to be continued, the Association must devise some additional income.

It would seem that the special but vital field of service now being covered by this Association ought to justify the hope that at least 200 canners would support it, and pay its annual dues of $15.00, since $3,000.00 would carry the yearly budget very nicely. I can see so much really helpful service which this Association can do, without harm to any offer, that I shall be deeply disappointed if we fail to make it a vigorous agency, always at work upon the problems of the industry.

Recommendations.

This review of the year, incomplete and faulty as it is, may be best epitomized by the following recommendations which I beg to submit to the proper committee:

(1) That the Association fully approves and endorses the plans and policies of the Food Administration to conserve the food supply, and that we express our desire to assist and co-operate with the work in every practical and helpful way.

(2) That the Association advises that prices on 1918 pack of goods be based upon all costs of manufacture, and the naming of prices be delayed until the costs are known.

(3) That the Committee on Seed Supply be directed to prepare and present to the Congress of the United States, and to the legislatures of the several States, a uniform law defining the type, and character of seeds which shall be offered in trade, providing certain standards as to tests of germination and certain penalties for the violation of the provisions of such a law.

(4) That the president appoint a committee on Legislation and direct it to prepare and present to the Association a uniform law, which would define the standards of sanitation for canning plants, as well as for their inspection, said law to give the States power to sieze, condemn and destroy by due process of law any canned foods which have been packed from putrid or decayed or decaying products.

(5) That the Association direct the Committee on Soil Fertility to continue its effort to enlist the aid of the Agricultural Experiment Stations to the end that trial plats of canning food crops may be made and observed and recorded; that if necessary the legislatures of the several States be urged to make the necessary appropriations for this work.

(6) That the National Association be requested to secure a survey of the tin plate and tin can industry to the end that the canners may be fully advised as to the ability of these industries to care for their needs in 1918.

(7) That a Committee on Conserving By-Products be appointed to co-operate with the Government and other agencies in seeking to transform the by-products of our industry into useful commercial materials.

(8) That an effort be made to guarantee the expense and salary account of the secretary for the balance of the fiscal year.

Compensations.

In spite of the horrors of war, in spite of the uncertainties and disappointments of our industrial enterprises, the year is not without its compensations. We find some spiritual exaltation even in the passing of our beloved associates: Wiley, Hegerle, Tamm, Trench and Langbridge; since while we miss their material presence, the spirit of their personalities is more deeply felt in their absence. Moreover, the memory of these men, their lives of labor and usefulness, refresh and reinforce our own.

The spirit of the American citizen is both unafraid and forward-looking. Always it looks to find some cloudless prospect of earth or sky. If the bitter experiences of the year shall help us to destroy the force of the absurd tradition under which the canner has sold his product, without knowing its cost; if he has developed a thoughtful attitude of mind towards the vital problems of our industry, if the economic stress has finally through necessity brought canned foods to their rightful place in the dietary of the world's foods, it shall have been a goodly and profitable year, after all.

Moreover, the year's experience has emphasized the need for care, thrift, foresight and efficiency in the conduct of the business; more and more we are coming to realize that industry is highly technical in its nature and that its best development is demanding trained men, men trained in the sciences of chemistry and engineering and in their highest application to the canning processes.

There is still another sort of compensation for the canner who delivered under his contract all the goods which he packed. We hear now in some quarters considerable adverse criticism of canners who are not acting in good fatih under their contracts. I trust that there are not many of such canners who are breaking their obligations in order to take advantage of the present markets. It is true that many canners have suffered loss in fulfilling their contracts and in time of war all contracts are more or less pliable. But I am confident in the belief that the great majority of the men in our industry have lived up to their contracts at whatever loss their execution might entail and to them there is today a certain kind of satisfaction over the year's business which cannot be compensated in dollars and cents.

But it has been even more significant. Upon the call of his country, the canner has enlisted in and for the war. He has given his quota

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of the necessary food supply for the Army and Navy, freely and gladly; not without some sense of pride and honor, that this food is sound and wholesome, and that he has sold it to the nation at a price so fair and just that not even the most disgruntled jobber dare charge him with profiteering. When all other industries shall have served the nation as patriotically as our own, the boys in the trenches shall have come nearer to final and complete victory and the burden of taxation shall fall more justly upon the backs of all citizens.

There is another compensation which is especially interesting. The demand for staple foods has caused canned foods to receive the almost general approval of the public. The note of confidence given to these foods by the Government when it ordered great quantities for the Army and Navy settled for all time the mooted question in the minds of many housewives of their purity and value. From this time forward, I predict the public demand for canned foods will easily keep pace with their production, since their production will soon reach a limitation placed upon them by the limitations of available and suitable soils and climate.

Even the war itself is not without its compensations for all true Americans. It was inevitable that this nation should take up the cause of human liberty as against autocratic rule. All the hallowed rights for which the Republic has stood for more than a hundred years are now at stake. The somewhat pessimistic view of the war, spoken of in the early part of this address must not be misconstrued. It is truly a struggle in which the strongest will survive; but as we believe the cause of right must prevail—not only the strongest but the noblest side must survive.

That we are fighting for human rights, one needs only to know something of the moral and intellectual thought and ideals which have been taught and disseminated in Germany during the last 50 years. The philosophy of Schoepenhauer, Nietzsche and Treitsche, the militarism of Barnhardi and Tirpitz, the theology of Franke and Lerman, are all the expressions of the materialism of Darwin and Spencer raised to the nth power. The idealism of Kant, Hegel and Freichte which directed German thought during the first half of the nineteenth century, has been supplanted by the doctrine that the superior human race is one that not only wills to exist, but also wills to power; that the German nature and culture is superlatively finer and nobler than that of any other race; that the German God and the German conception of righteousness are one and the same; that the German race is a race of supermen who are divinely called to heal and lead all other races; and that all other races being decadent must give way to the onward march of German might.

Against these doctrines, the American nation brings the philosophy of Jesus Christ, the political principles of Pitt, Burke, Bright, Gladstone, Jefferson, Hamilton, Washington, Lincoln, Roosevelt and Wilson (applause), the theology of Drummond, Brooks, Fiske and Royce.

Against the unchanging status of autocratic power we bring the memorials of democracy, the institutions of freedom under which a self-governed and self-governing people have enjoyed the invaluable privileges of life, liberty and happiness.

The war, therefore, is a conflict of ideas and ideals. It is an old struggle through which the races have come from the time of Egyptian civilization. We have fondly believed that the issue had long since been won on the side of freedom, but as we turn to the battlefields of Europe we know now that the issue is not won, but trembles again in the balance of contending armies. If the cause of freedom is not won now, it will be lost to the world for centuries yet to come.

In a conflict of this kind there is but one answer to the question, "Shall the war go on?" It must go on until it is won by the sons of liberty for the cause of liberty. For us, the conservators of the people's foods, there is but one path in which we must walk, at whatever cost of ease and comfort. We must do, as we have already done, more than our bit! We must do our whole duty, and, doing it, contribute our gifts of toil, money, service and self-sacrifice to the world-wide struggle for a noble and abiding peace.

With Alferd Noyes, let us learn to fight and to pray:

Thou, whose deep ways are in the sea,
Whose footsteps are not known,
Tonight a world that turned from Thee
Is waiting at Thy throne.

The tow'ring babels that we raised,
Where scoffing sophists brawl,
The little antichrists we praised—
The night is on them all.

The fool hath said—the fool hath said--
And we, who deemed him wise,
We who believed that Thou wast dead,
How should we seek thine eyes?

How should we week to Thee for power,
Who scorned Thee yesterday?
How should we kneel in this dread hour?
Lord, teach us how to pray!

Grant us the single heart, once more,
That mocks no sacred thing,
The sword of truth our fathers wore,
When Thou wast Lord and King,

Let darkness until darkness tell
Our deep unspoken prayer,
For, while our souls in darkness dwell,
We know that Thou art there.

(Continued applause

Committee Appointments.

THE PRESIDENT: The chair desires to announce the appointment of several committees.

The Committee on President's Address—W. C. Leitsch, C. W. Swain, C. S. Crary, W. R. Roach, R. Dickinson.

Committee on Memorials—J. J. Mulligan, Samuel B. Orr, Stephen Hart.

Committee on Resolutions—George E. Stocking, James Anderson and W. W. Wilder.

President Sears then introduced President Burden, of the National Canners' Association, paying high tribute to the fine work the National and its officers are doing.

President Burden responded with an address that is worthy of careful reading and study, but for which we must ask our readers to wait a week. We prefer to give every bit of it to presenting an emasculated summary, hence the postponement. A rising vote of appreciation was tendered President Burden at its conclusion, and President Sears then called for the reports of section chairmen, saying:

Message from the Sections of the National Canners' Association.

The President: Now, we are very fortunate having with us three of the sectional chairmen of the National Canners' Association, Mr. W. R. Olney, chairman of the corn section; Mr. H. C. Hemmingway, chairman of the pea section, and Mr. McCall, of the baked beans or dried beans section.

Mr. W. R. Olney, chairman of the corn section, responded, giving some interesting details of the work done by his section, the full report of which is reserved for the national meeting in Boston.

The President: Now, we will have a word from Mr. H. C. Hemmingway, chairman of the Pea Section.

Mr. H. C. Hemmingway. Mr. President, ladies and gentlemen. My report will b every, very short as the work of the Pea Section has not been very extensive as yet.

The work of the Pea Section for 1917 has been limited, and I might say that the principal item of interest to the pea canner has been the working out of costs in connection with the Bureau of Cost Accounting of the Department of Commerce, in order to arrive at the cost of production of canned peas, whereby the pricing of the same by the Government with a reasonable profit added, could be made upon a basis that was fair to the Government and also to the canner, for such quantity of canned peas as would be required for the Army and navy, and the results obtained have been brought about only by a good deal of work by those having this in charge, and the packers should feel that they have been dealt with very fairly as to prices that have been made upon peas that are to be used for Government requirements.

This matter was taken up before Mr. Nicholson, the chief accountant for the Bureau of Accounts of the Department of Commerce, as the last resort, feeling that the revision of prices downward about ten cents a dozen, I think, which was the revision contemplated, was not right. We felt that the best we could possibly do under any circumstances would be to agree to a revision of not more than five cents a dozen below the regular selling price that we first named.

But I think under all the conditions which must be taken into consideration that the packer should be very well satisfied with the results obtained and the prices obtained on whatever of their peas they have shipped to the Government.

Mr. Henry Burden: Mr. President, I would like to say that Mr. Hemmingway neglected to say that this committee did its work so well that out of ten items only seven of them were revised five cents; three of them stood as originally planned.

The President: We will now hear from Mr. McCall, chairman of the Dried Bean Section.

Mr. J. W. McCall: Mr. Chairman and Gentlemen. The chairman of the Dried Bean Section is too much bewildered to make a report. He has come up here today for the purpose of receiving information rather than of imparting information. I presume many of you who are in the dried bean packing business are more or less bewildered at this time. Now, our bewilderment is such that it would be unfair to inflict it upon those who are not in that particular line of business, who have not been inveigled into it. Therefore, I will have to be excused from making any remarks on the subject to you gentlemen who are not particularly interested. I am going to ask all those who are interested in the packing of dried beans if they will remain in this room after the adjournment of this meeting. We want to hold a little prayer meeting here. (Laughter and applause.)

The President: I am glad to know that the president's suggestion that we ought to pray along the poetic lines of Alfred Noyes is bearing fruit.

I will now give Mr. Shook, our secretary, the floor.

Presentation of Banner to the Association.

The Secretary: Sometime ago a friend of the organization, a gentleman who likes to climb by seeing his fellow men climb along with him rather than to climb over the defeat of his fellow workers, conceived a happy idea and asked me to put that idea into execution and he backed up the proposition financially. I am going to present to you a very nice banner for the Western Canners' Association, that our worthy president has had made.

I want to assure you, gentlemen, that there is nothing indicating on this banner that the Western Canners' Association thinks the time has come that hey should not grow any more. The names of these fifteen States here are not all the States that could possibly be added to it. We have included on this the names of states from which we have membership at the present time and I am very happy to say that outside of these fifteen States we have a representative membership that have branch factories which are not within the States named here. We have men from Maine that are members of our Association. We have gentlemen from Maryland and from New York and a great many other States other than those that are named here.

The President: I hope this flag may symbolize the definite work which this Association is doing and has done now for many years.

Mr. Geo. G. Bailey Speaks.

Mr. Bailey: Mr. President, I have been greatly pleased, gentlemen, in listening to the remarks, the speeches, the well prepared addresses that have been presented to us, and it would be very presumptuous on my part, being called upon as I have been, unexpectedly, to take up your time by attempting to entertain or instruct you in any way. I have known of the Western Canners' Association since its inception but never had the pleasure of meeting with you before, and I assure you I listened with a great deal of instruction to the words that have been spoken.

I thank you, Mr. Chairman, for calling on me to extend you a word of greeting and to receive the word of greeting that I have.

The President: We have also with us one of the largest if not the largest corn packer in Maryland, a young man of great promise and great achievement, and we are very glad to hav ehim here. We would like to hear a word from him. Mr. Shriver.

Mr. Shriver: Mr President, I have not the least idea of anything that I could say that would be helpful or instructive to you. I did not know I was going to come until yesterday afternoon. This is the second meeting I have attended of the Western Canners' Association. I hope I will have opportunities to come many more times.

Mr. Hunt: Mr. President, I don't know that there is anything that I can bring before this meeting, I am sure. Cost Accounting Committee is about to meet and when it does and has its report to render I am sure that will be more instructingto you than anything I dare attempt to say at this time.

An adjournment was then taken until 2 o'clock P. M., of November 16th. 1917.

The President: We will have the report of the Committee on Factory Efficiency and Sanitation by Mr. F. A. Stare, Chairman.

AFTERNOON SESSION, NOVEMBER 16, 1917.

REPORT OF THE COMMITTEE ON FACTORY EFFICIENCY AND SANITATION.

By Mr. F. A. Stare, Chairman.

The committee of which I have the honor to be chairman received their appointments in July and the meeting was called early in August, which was attended by about one-half of the committee, the rest of us, of which I was one, being unable to be present on account of still being busy in the pea canning business. However, considerable correspondence has been conducted between the chairman and the various members of the committee and considerable of that work done. Yesterday a general session of the committee was held, lasting throughout the afternoon and evening, since which time we have been trying to condense the work that we went over, so that it could be presented very briefly.

Efficiency, this watch-word of American business and the slogan of trade conventions, what is it? Where does it come from and how long has it been here? We find it is very difficult to define, because it is so very new that apparently little has been written about it. In fact, all the available literature on efficiency would scarcely fill a five-foot shelf, and the bulk of it is highly specialized, pertaining to particular phases of industry, mostly to machine shop practice and the like. In fact, we find that only one volume has been written as yet dealing with the general principles of efficiency. Harrington Emerson is the man who is recognized as the foremost exponent of efficiency. He it is who wrote the volume referred to. His definition of efficiency is this: The elimination of all needless wastes in material, labor or equipment so as to reduce costs, increase profits and raise wages. Roosevelt's definition is the application of conservation to production. While Brandies defines it as universal preparedness. It is really easier to say what efficiency is not than to say what it is.

It is not a new name as relation to industrial truths, but is rather a new point of view in the business world. It is not expert accounting, because accounts deal only with records and not the method. It is not energy, as misdirected energy is, perhaps, the most universal of all industrial wastes. It is not economy, as saving is often the most suicidal policy. It is not slave driving, for one of the chief benefits from efficiency is the benefit of elevating and improving the condition of the working man, not to oppress him. And it is not system, because the most useless and wasteful actions can be done in a very systematic way, and it is very easy to have too much system and too much red tape, but it is impossible to have too much efficiency.

Efficiency means more net, n-e-t, that little word of three letters, which is one of the most important words in the vocabulary of business. Net means not how much money you take in, but how much you have left. You can take in a million dollars and pay out all of it, and you have no net. You had better taken in one dollar and have ten cents left than to take in ten dollars and have a nickel left. It is net that decides whether we are winning or losing in business. It is not volume of business that makes net. It is not system, nor energy, nor resources. It is all of these plus efficiency. I think it would not take a very large net and it would have to be rather small net to hold the efficiency of the average canner.

I wonder if it is a mere coincidence or whether something unusual is now going to happen that at this same time in this same hotel another convention is being held under this roof, that of the League of Compulsory Education Officials, whether it means that the canner is going to be compelled to be educated.

Now, that we have tried to tell both what it is and what it is not, if you can tell what it really is from what we have stated, then you are really efficient.

Let us ask ourselves a few test questions and on the answers thereto, whether we can solve them readily or not will depend largely our efficiency, on those answers will largely depend whether we are efficient or not.

Take, for example, your plant. Is your plant in the right location with reference to the soil of the sorrounding country, and are we attempting to pack the right product that can be properly grown by the farmers around that section? To illustrate, you would not attempt to pack tomatoes or string beans in the heart of the corn section, where the farmer thinks and acts in large units, where the divisions are 160, 240 or 320 acres and where he farms with four-horse teams and tractors. He would not look very well crawing around on his hands and knees trying to pick peas or beans and tomatoes. They must be grown in a section of small farms and large families.

Then what is his attitude towards the industry? Is he friendly or hostile? Are the net results of his service or his labor scatisfactory? Will the net returns compare favorably with other crops he is growing? If not, are we starting right?

The committee believes that the first step in improved condition in the canning business is improved relation with the growers. If they have not been fairly treated, if they have not been paid a proper compensation, we cannot expect an efficient plant in that location.

What is the construction and layout of the plant, that is, with regard to convenience? Was it built specially for this purpose or was it some building merely adapted to it. Is it so located the the machinery and equipment can be arranged in a convenient manner? What is the course of the raw material through the factory? Is it regular and systematic and in proper sequence, or is it somewhat intermittent and circuitous?

What is the type and physical condition of the machinery? Has it been well kept up? Is it in a state of preparedness? Will it run? Or, if it is in good condition, is it obsolete or should it be replaced with machinery of more modern type that will permit the conservation of labor? As an illustration, certain types of machinery that have become more prevalent in the last few years admit of a great saving of labor. Is it wise to hang on to the old equipment just because it is in a good state of physical condition, even though it does require a good deal more physical labor? These are questions that we must answer for ourselves.

What about our labor supply? Who fits the men to their jobs? Are they cheerful or sullen? What inducements are offered for their work? Are sanitary and working conditions attractive? Can we work out a piece-work system that will enable deserving and capable men to earn more for doing more? Can we raise wages, obtain better workmen, turn out more goods and at increased profits?

These questions and hundreds of others were all discussed by the committee in our session yesterday, but perhaps three-quarters of our time was devoted to the question, from which it is quite evident that it is the one thought that is in the minds of canners at the present time more than any other one thing—am I buying my supplies properly? Have we given proper thought to this? Are we utilizing our by-products as we should?

But why go on indefinitely? There are hundreds of other questions of a similar nature. The committee realizes that we are not expected to prepare a recipe or prescription that will cure the ills of a generation or of an industry in a day. We merely hope it possible to say something that will cause us to think and try to improve our personal efficiency, because it is only by improving our personal efficiency and knowing more ourselves that we can impart to others what we know and thus raise the efficiency of the plant and of those with whom we are associated.

Any thought or idea that tends to reduce costs is helpful for this increases the net.

One member suggests that we use a box containing three dozen No. 2 cans instead of the customary unit of two dozen. He has adopted this size package in his own business. He states that the cost of the boxes that will hold three dozen No. 2 cans is only a cent or two more than the boxes that will hold two dozen. Thus, in a pack of a hundred thousand dozen he will have to buy only thirty-three thousand boxes instead of fifty thousand. At first thought you might find some objections to it, and some of his jobbers did, but when it was properly explained to them their fears were found to be groundless. The case would still remain the unit of sale; the dozen would still be the unit of price. There is really no objection to it. The weight would be no more than a three-dozen case. It has a great deal of merit that is well worth our consideration.

It has also been suggested that the utilization of by-products is of sufficient importance that it ought to be referred to a special committee. That is directly along the line of one of the recommendations made by President Sears this morning. It is such a large subject that it could easily occupy the attention and earnest work of a committee for no other purpose.

We urge closer reading of the helpful special articles that appear in our trade papers from time to time and of the many helpful constructive and instructive bulletins issued by the National Canners' Association, of which there have been a number.

We urge attendance at trade conventions, not merely in the bar or lobby, but in the convention hall.

We recommend visits to other factories as a means of widening our information. I know of no way whereby better first-hand knowledge can be had than by frequent visits to other factories, not only to see how he does other things, but to avoid some of the things that we may see on those trips.

There is a great deal more that we went over, but I tried to condense it briefly and hurriedly without offering any particular suggestions.

The sanitation end of our subject will be presented by the secretary of our committee, Mr. Reicheldorfer, who I thank can speak louder than I have been speaking.

THE PRESIDENT: We will hear from Mr. Reicheldorfer on sanitation.

Sanitation, by Mr. E. W. Reicheldorfer.

Our committee found that some of us had given considerable thought and had taken quite a lot of correspondence upon themselves on the efficiency side of our work, and others had talked over and considered more thoroughly the side of sanitation. The work under either one of these subjects is a job in itself, and we cannot make any definite report on the sanitation side, except merely a report that we are working and are making some progress. We hope to have something more definite to give you when we come to our annual meeting.

While there is some doubt as to the correct definition of efficiency, as it is quite a new word, I believe all of you know what sanitation is. The sanitary way of doing a thing is the clean way, the wholesome way and the healthful way and the way in which all of those engaged in the producing of food should conduct their business. It is sometimes necessary for those among the canners who do conduct their business along that line to take some steps towards seeing that the other fellow does it also One man or two men in the canning industry who do not observe the rules of cleanliness and wolesomeness and sanitation will destroy a great proportion of the constructive work that the other canners do You know quite well that the producing plants of the country which are famous and which are held in high esteem are the plants which do their work in a cleanly and a sanitary as well as in an efficiency manner. Really to the public, to the consuming public at large, the sanitary end of it, the wholesome end of it, is the end that makes the strongest appeal rather than the side of efficiency.

In some particular States we have sanitary laws carried on by food commissioners or dairy and food departments, compelling canners and other food producers, or making a pretense of compelling them, to run their plants in the proper way. Our committee found in going over these different States, the laws of these different States in the Western Canners' Association, that there was a very wide difference between the sanitary codes of the States, and in fact a good many of the States have no sanitary codes at all, or have no form of inspection whatever. It occurred to us that probably the best work that we could do in this committee or attempt or start would be to try to promote a uniformity among the different States in the Western Canners' Association in their sanitary codes, so that we would all be working under one system and under one plan and along the same lines, so that the packer in one State would have no advantage or disadvantage over the packer in another.

With that idea in view, we formulated a rough draft of what we considered a proper sanitary code that would apply to all States and incorporated in that rough draft such things as we thought were necessary for the sanitary conditions of a food-producing plant. It is no more than a rough draft. As Mr. Sears stated, our committee has not had enough meetings yet to refine this and get after the details that we hope to do in our future work. Then when we came to this meeting, we heard Mr. Burden's very interesting talk this morning, and we regretted very much that we had not known before of the interest that is being taken by the canners over the country in the inspection by the National Canners' Association. If this should become universal, I do not believe it would be necessary or advisable to try to do anything in the way of getting sanitary measures passed in the States that do not have them. I believe that the National Canners' Association can handle it probably to better advantage than the State commissions or that you can handle it by State laws, and the suggestion was made that this matter be referred to some committee, possibly our own committee, or that another one be appointed for that purpose, to try to bring about the universal system of inspection as the sardine packers have already adopted, and as I understand the Iowa State Association and also the California packers have adopted. If that comes to pass our committee will certainly be glad to do everything in its power to work along those lines, and it then may be necessary to formulate a different code, probably more comprehensive than the one which we have written up in our meeting.

I will read you this rough draft. Please bear in mind, though, that

there may be some things that we have overlooked. There may be some things that are not practical, which will be taken care of in the further work of this Association and of this committee in particular I might say that we have gotten together the laws of the States which have them and which we were able tto get, and we took from those what we considered to be the best provisions, the best regulations, and supplemented them from our standpoint with some others.

"Grounds and Location"—Food-producing factories shall be located only in such places as can be placed and maintained in a sanitary condition, where drainage is ample, where light and air are not shut off by surrounding buildings or objects, and where sewage and refuse, both liquid and solid, can be promptly and effectively removed.

No plant shall be located where it is impossible to receive the raw product promptly and in a cleanly manner, without danger of damage or contamination.

All grounds immediately surrounding food plants shall be kept clear of refuse of all kinds and tiled or drained, so that surface water passes off quickly.

All driveways within 50 feet of any plant shall be oiled or treated in some way to prevent the formation of dust.

All garbage and waste material, such as cobs, husks, pea vines, tomato skins and other gross by-products of operation, shall be removed to a distance of not less than 100 feet from any building used in preparing or handling of food.

Horses, cattle or other live stock shall not be stabled or fed within 100 feet of any such building.

Buildings—Before any new plant or buildings shall be used in the preparation of food products for any building not now so used be converted into such a plant, the same must first be inspected or approved by the proper authorities entrusted with the enforcement of sanitary laws or by the inspeectors for the National Canners' Association where public officers have no jurisdiction.

All buildings used for food-producing purposes shall be suitably ventilated and lighted either by natural or artificial means. Ceilings shall be of sufficient height to give ample clearance for all work under suspended transmissiono, machinery, etc., and the walls and ceilings when constructed of wood shall be painted with light colored paint that can be washed. In new plants when frame construction is used, this should be preferably of mill or slow burning type.

In new plants provision must be made for the complete screening of all windows and openings in factory rooms where the product is handled after the first cleaning or washing and before same is sealed in containers. Plants already in operation must be screened as thoroughly as their type of construction permits.

All floors shall be tight and of impermeable materials which can be flushed or washed clean. Floors shall be pitched to insure prompt passage of water and liquid waste and proper and sufficient gutters and sewer openings provided. In case slatted or open floors are used over a cement or other tight sub-floor, ample space must interfere to permit of proper washing or flushing.

All sewers shall be of ample size and proper design to remove waste effectively and quickly from buildings and grounds. Where sewers discharge into open ditch or streams sewage must at all times be kept diluted with sufficient volume of water to prevent accumulation of solid matter that might become decomposed and produce insanitary or ob noxious conditions along the stream.

Toilets and Rest Rooms.—Separate rooms shall be provided for each sex, completely separated from work rooms, properly lighted and open to the outside air and screened against flies. Where outside toilets must be used they shall not be located within 100 feet of any building, room or place used for the receiving, preparation or canning of foods. All toilets must at all times be kept in a clean and sanitary condition and properly disinfected.

Separate wash rooms for each sex must be provided in or adjacent to all work rooms, and must be properly lighted and ventilated. Running water and other facilitiees must be provided whereby the employees can keep clean and tidy.

Where a change of clothes for work is necessary, dressing rooms must be provided with hangers or ventilated lockers for street clothes.

All living quarters provided for employees must be suitable for the purpose, frequently disinfected, properly ventilated and have sufficient light and air to be healthful and comfortable and must be kept clean by the occupants.

Employees.—Employees shall not smoke or chew tobacco inside any food-producing plant.

Spitting in or about work rooms shall be prohibited.

Persons infected with any infectious or communicable disease or with open wounds or sores shall not be employed in or about a packing or canning establishment.

All male employees shall wear wash over-suits and caps. Female employees must wear clean dresses and aprons made of washable fabrics and clean, washable caps, entirely covering the hair.

Common drinking cups shall be prohibited and sanitary drinking fountains provided.

Equipment, and Handling of Product.—All machinery, belts, chains, conveyors, utensils, and other equipment used in the preparation of food products shall be cleaned daily and kept in a clean and sanitary condition. Ample supply of water and steam for cleaning shall be provided within easy access to this equipment.

All tanks of water in which the product is held or washed shall be provided with a continuous fresh supply of water and an overflow.

All tomatoes, peas, corn and other products in preparation for canning or making of food shall be thoroughly washed or cleansed according to approved methods before being scalded, blanched, cooked or filled into containers.

Only potable water shall be used in making syrups or brine or in washing equipment coming in contact with food.

All cans and other containers shall be thoroughly washed or sterilized before being filled.

Waste.—All garbage and waste material shall be removed daily from the buildings to a distance of at least 100 feet from any building. Sanitary receptacles must be provided for waste paper and other refuse and must be emptied daily."

Those are the features of the code that this committee has set up. I don't know that if obeyed to the letter they would, but they certainly would make for food-producing plants that we should be proud of. The ideal condition is hard to reach in anything and especially in this matter of sanitation, I think, but if the canning industry makes as much progress in the next ten years as it has in the past ten years along this line, I think that we will have occasion to pat ourselves on the back, that is, ten years from now, not now probably.

THE PRESIDENT: This committee has certainly presented a very helpful report. I might say that Mr. Stare represents a plant which is known throughout the country for its efficiency, and that Mr. Reichel-dorfer, as the manager of a plant in Ohio, under the inspection system of that State, was the first manager to develop a plant which represented one hundred per cent—efficiency in sanitation. Therefore, both of these men can speak with some authority, because they have demonstrated the value of the rules and regulations which they now suggest.

We will now hear the report of the Committee on Soil Fertility by Mr. Miskimen, chairman.

Soil Fertility, by Mr. W. A. Miskimen.

By way of foreword to this report, would state that the Committee on Soil Fertility was appointed last Spring, and that up to the present time it has been in session only twice, at neither of which sessions was there a full attendance.

We are told that when the wandering tribes first settled down to anything like systematic cultivation of the soil, they grew one grain crop continuously on the same ground, until it became so impoverished that an adequate crop could not be secured. Having nothing in parcular to hold them, they then moved on to some other spot where virgin soil was to be found and repeated the process. Such action was entirely satisfactory under conditions existing at that time, but would be out of the question today. Since we are to consider the growing of plants and the soil which is essential for their production, it might be well to recall briefly a few fundamental facts regarding:

First—The constituents of the plant.

Second—The source of these constituents.

Third—The securing and rendering available of these constituents for plant use.

In other words, of just what is any given plant composed, where are the different substances needed for its make-up to be found, and having found them, how shall we supply them to the plant in sufficient quantitities and at the proper time?

There are known to chemistry some eighty or more basic elements, but of these there are many thousand combinations or compounds of widely diverse character. For instance, alcohol, sugar, starch and fats are all composed of three elements, carbon, hydrogen and oxygen. Plants are composed of many compounds, but usually contain a total of only fifteen basic elements. Of these fifteen, five are said to be unnecessary to plant growth, leaving ten that are essential. Of these ten, our common plants obtain carbon and some oxygen from the atmosphere, the fixation of the carbon with oxygen and hydrogen being the function of the plant leaves, and requiring sun light for its consummation. Hydrogen and oxygen are supplied to the roots by water. The remaining seven elements (with the exception of nitrogen in the case of legumes, such as clover, soy beans, etc.), must be present in the soil, and furthermore, must be in such form as to be soluble in the soil water in order to feed the roots. These seven elements which must be so secured by the plant are nitrogen, phosphorous, sulphur, calcium, magnesium, potassium and iron. It is an interesting fact that these seven elements constitute only about five per cent of the common agricultural plants, and only one and one-half per cent by weight of the matured field corn plant, but nevertheless they are, under ordinary weather conditions, the limiting factors in the size of a crop. When any one of these is deficient in available form, the yield is reduced, as deficiency in one element cannot be remedied by surplus of another.

Sulphur, iron and magnesium are present and available in most soils to last for a long period. Of the four remaining elements, potassium and calcium are sometimes low, but it may be said in a broad way that nitrogen and phosphorus are the most extensively deficient in the Middle West soil; at any rate, are the first to be depleted by cropping.

In what form did these mineral elements originally occur on the earth's surface, and how did they finally attain the form suitable for plant food? You will note that in referring to any of the necessary elements the qualifying word "available" has frequently been used. Supposedly, the earth was once a molten mass, and on cooling, it solidified into rocks. These rocks, of which granite is a good example, must have contained all the mineral elements, for no other source is conceivable. However, one could not raise much of a corn crop on a granite boulder, for while all the necessary elements were present at that stage of the earth's development, they were not in available form With the passage of time, the surface of these rocks was disintegrated by freezing and thawing, running water, the grinding action of glaciers and other agencies, until fragments constituting the base of the soils which we know today were ground off. The degree of fineness to which the rock has been reduced furnishes a common classification for soils, such as gravel, sand, silt and clay.

Of course, we are considering only the simplest case, because all soils as existing at present were not produced directly from the original or igneous rocks. One of the effects of weathering was to separate the rocks into simpler substances, so that great limestone deposits will be found at one place and hills of sandstone somewhere else. Also, the rock fragments may have been moved far from their original positions, those transported by rivers building up the so-called alluvial soils, and those carried by glaciers being known as drift soils. A large part of Northern United States is covered by drift which was pushed down from the North by glaciers and left when the ice melted away. Bear in mind that the mere grinding up of the native rock into ever so fine a state did not yet furnish proper food for the higher forms of plant life, and even if we had our granite boulder pulverized it would still be far from desirable as a seed bed for our corn. The essential elements were still locked up, so to speak, and had to be transformed into substances that the plant could assimilate. The chemical changes next necessary were originally brought about to a large extent by the action of water. Pure water in itself had very little solvent effect on the desired minerals, but the water passing into the ground contains in solution carbonic acid gas derived from the air, and with this aid the minerals started dissolving to a considerable degree.

While the rocks were thus disintegrating, vegetation of the simpler forms had started. This decayed from year to year and put back on the forming soil all the plant food which it had used and which was then readily available for the next crop. Therefore, each succeeding crop had all the materials furnished by the one before it, together with what was being dissolved from the rock. A third force also became active, because the decaying vegetation produced acid substances which materially hastened the freeing of the elements, making them ready for plant food.

Also, there was being produced humus, defined as organic or vegetable matter, which has so far decayed as to have lost its original structure and become incorporated in the soil. This humus is a prime necessity as an ingredient of fertile soils, and while a mixture entirely free from organic matter would raise a crop where water supply and other factors were under complete control, the humus is indispensible under ordinary field conditions. It is a benefit in several different ways. It holds plant food, especially nitrogen, phosphoric acid and potash in highly available forms, and is of great value in a mechancal way, in that

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In the progress of natural events, just described, the effect was cumulative, as nothing was taken from the soil and a great store of plant food was built up. It required uncounted thousands of years to prepare the virgin soil of this country for the coming of the white race. Since then much has been taken out, comparatively little put back. A great deal of the accumulated richness of the soil has been removed in crops, and farmers as a class realize that something more than drainage and careful tilling are required to maintain the condition of the land. The problem of supplying to the plants in available form such elements as may be deficient, at a minimum price, is one of the farmer's problems today. This supply is provided by fertilizer applications of various sorts and by crop rotation.

Phosphoric acid is often required, and the common carriers of this for fertilizing work are raw rock phosphate, ground bone, acid phosphate and dissolved bone black. Among the nitrogen carriers are nitrate of soda and sulphate of ammonia, together with some of the stockyards' products. Then there is a long list of various commercial fertilizers, some mixed for specific purposes and some for general farming, the last being known as complete fertilizers. These are all prepared from only a few substances, in different combinations. Then of vast importance are the manures, both from barnyards and from green crops. Also, lime is a big factor where intelligently applied, as it corrects the acidity of the soil and helps to bring about conditions which render nitrogen available to the plants. Crop rotation is almost universally understood to be both necessary and beneficial. The reasons for rotation and its many advantages are realized by all farmers, although there are still many instances where the individual farmer has not worked out the rotation which would best suit his conditions.

There is a growing tendency to maintain fertility of the soil, but conditions are still very far from being ideal. It is doubtful if general farming, taken as a whole, is more than fifty per cent efficient today. Many farmers who realize that they cannot get something for nothing are treating their soil in a spasmodic manner, which has neither system nor satisfaction. Most of them know the operations necessary to good tillage, but many of them know how without knowing why. How many of them realize that tillage is of benefit for all of the following reasons: The feeding ground for roots is increased; beneficial chemical changes in the soil are hastened; the soil receives oxygen through admission of air; nitrification is aided; the amount of available water is actually increased, and, also, this water is much better conserved.

The farmer knows that manure is good. Many of them handle it in such a way as to waste fully half of its value. One of them hears that a neighbor had some success with rock phosphate so when he gets time he orders a car or two, and what does he do with it? Simply puts it somewhere on the farm, maybe where it will do the most good, and maybe where it is not needed at all. Perhaps it does go where it is needed, but he may not furnish it with a medium whereby to render it available, as rock phosphate is not soluble in water. A commercial fertilizer salesman comes along. He looks over the back fence at a field and tells the farmer it needs some "sixteen-six" or some Paragon brand or whatever else he may have to sell. Then when any one of these things fail to show big returns the farmer's growing confidence in scientific agriculture is set back about five years.

This may be overdrawn, but not greatly so. Any number of farmers have the best intentions in the world as regards maintenance of soil fertility, but have not caught the knack of how to go about it. The big outstanding fact, however, is that they want to build up their land, and the realization of that desire will come all in good time. Even the haphazard application of fertilizers so often seen at present is a cheering sign. The average farmer did not start far enough back. He hears or reads a lot of technical terms which mean nothing, because he hasn't been introduced to a few of the fundamentals, but eventually that, too, will be all corrected. Also, I believe, that many farmers, both tenants and owners, are straining themselves to handle too large a body of land, where improved methods on a smaller parcel would yield them larger net returns.

Some content themselves with the thought that their crops are a little above the average. The average is no guide, except as a measure of our inefficiency. Illinois soil report No. 10 states that the normal temperature, sunshine, rainfall and length of season in Central Illinois are sufficient to produce fifty bushels of wheat per acre, one hundred bushels of corn, one hundred bushels of oats or four tons of clover hap, and where the land is properly drained and tilled, such crops would frequently be secured if the plant foods were present in sufficient amounts and liberated at a sufficient rate to meet the absolute needs of the crops. By the same token, the average sweet corn yield in Illinois this year, which was fifty-five and three-fourths cases per acre, might have been one hundred cases or more. The figures as to crop increases which may be secured by improved methods are almost incredible. Now that we have touched a few of the more obvious points, the real question remains, what are we going to do about it?

Probably not a great deal, but in the transitory period through which we are now passing every shred of information about agricultural methods that any canner can get and pass along to his growers or apply to his own farming, will help just that much.

At the first meeting of this committee we contemplated experimental land plots to be handled by representative canners in different parts of each State. After considerable investigation, correspondence and thought we have decided that a work of that extent is not feasible at this time. It is expensive, requires extreme care, and unless extended over quite a number of years, the results are very likely to be superficial and misleading. Also, some local conditions might enter into the work at any one point which would make the information derived worse than useless to those growing the same crop in other places.

To show how comprehensive this work must be, in order to obtain the best results, I might mention that the Morrow plots at Urban, Illinois, have been under constant observation since 1879. The Davenport plots adjoining them since 1895. In addition the University has thirty-eight other experimental fields in operation throughout the State. These fields average about twenty acres each.

One of the things on which your committee will endeavor to secure information is the amount of plant food taken from land by the different canning crops, particularly with reference to the elements which first become deficient in typical Middle West soil. There are published tabulations showing the pounds of nitrogen, phosphoric acid and potash removed from the soil in harvesting one thousand pounds of field corn in the ear, wheat, oats, tobacco and other items, but we have not, to date, located such figures for a list of the canning crops. If it develops that there are no such statistics, we will try to arrange with some of the experimental stations to secure them.

We also hope to interest some of these stations in extending their other work to include canners' crops.

Furthermore, would strongly recommend to each canner that he get in close working touch with the county advisers in the counties where he raises or contracts any products. If any of the counties do not have advisers, exert your activities and influence towards having them installed.

Nature is deliberate, but infallibly just. She is also a good banker. She will not permit continued over-drafts without penalty, but hands out mighty good interest on savings accounts. With the exception of Liberty Bonds, an investment in her securities through careful and intelligent soil treatment, is the safest and best paying opportunity the world has ever known. I thank you, gentlemen. (Applause.)

THE PRESIDENT: I had great difficulty to get Mr. Kiskimen to the the chairmanship of that committee because he said that he did not know anything about soil fertility. Now, either he has devoted himself to a most careful and painstaking study within the last six months or he lied to me. (Laughter.) Six months ago, because that is one of the most scholarly and informing papers on soil fertility that I have ever heard, and is certainly the foundation for further work, a splendid foundation for further work.

Now, we will have the report of the Committee on Seed Supply by Mr. C. H. Sears, chairman.

(Continued Next Week.)

EFFICIENCY MACHINERY.

By I. F. PIERCE.

The subject assigned me, "Factory Equipment as a Factor in Maximum Production," is so fraught with possibilities I will be able to touch but briefly upon those points which are of primary importance in this limited discussion.

Let us first be agreed, that given a factory perfectly organized from farm lands and seeds to claim adjustment and collection departments, a maximum and efficient production is impossible unless factory equipment be up to the same high standard.

At the very outset it is imperative that whatever machinery installed be so balanced throughout the line that peas move steadily and without delay, when once the canning operation is begun, from viners to cooling tanks with the minimum man power. By this I mean every machine should be installed with the idea that it is a segment of the unit and should have sufficient capacity to handle its share of the work without being unduly taxed.

Right here I cannot resist the impulse to criticise the practice so many of us indulge in, that of operating machines far beyond their actual capacity. Manufacturers rate their devices sufficiently high, but few of us content ourselves with these ratings. It is well to remember, peas, in most instances, are worth more to the canner as seed than when poorly packed.

It is better that a few hundreds of dollars be invested in machinery which may occasionally stand idle (an insurance policy protecting the quality when the pack is large) than that thousands be lost through spoilage or improper packing arising from overtaxed facilities, the plant being unable to handle an excessive yield brought on either by unusually favorable weather conditions or increased acreage.

Naturally, the work of balancing equipment goes back to the original architect's plans. With a building improperly laid out, the factory management must needs work under a handicap. That an experienced engineer or factory superintendent who thoroughly understands his business is essential goes without saying. We must have a man, preferably a natural mechanic, a man sufficiently observing to be able to determine promptly just where his plant is weak, what machines are operating improperly, and who can determine, at least approximately, how long a weak place will run satisfactorily, and the best time to make the adjustment or repairs necessary to put it back in first-class shape.

This brings us down to repairs. Like mistakes which are best corrected just before made, repairs should receive attention long before necessity stares the superintendent in the face in the midst of a hard day's run.

Immediately after each pack is finished, every machine in the plant should be thoroughly gone over and put in A1 working condition. At this time loose boxes, cams, broken gears, worn chains, improper alignment, etc., are fresh in the minds of all. After necessary replacements are made, all parts subject to rust should be thoroughly painted with heavy oil, and whatever dismantling is deemed advisable for the winter done. Three weeks before the pack next year is not time for this work. Then the efficient superintendent has had his entire plant running and is positive everything is working to a "T." Trouble enough develops during the pack even when these precautions are taken.

We all know too well how few of our machines are really built as factory machines should be built and not thrown together clumsily, having the appearance more of farm than factory equipment.

Of course, we realize the handicap the manufacturer faces with only thirty days in which to secure actual operating conditions. Work of perfecting canning machinery must necessarily be somewhat slow. However, we cannot but decry the practice indulged in by some manufacturers of placing machines on the market represented as tried out and practical and oftentimes sold at a premium above proven machines, when, in reality, the devices are still in the first experimental stages.

In summing up, that old axiom, "a chain is no stronger than its weakest link," was never more applicable than it is to the canning game, whether applied to the whole organization or merely to the factory equipment; and factory equipment is, in my opinion, as the keystone is to the arch, for unless it be in every detail efficient and sufficient, no other department whose activity contributes to successful canning can yield its best results.

As Brokers View The Market

Latest information from many sections of the country as viewed by the leading Brokers—The canned food situation as IT IS—Reports mainly by wire.

BALTIMORE, MD.

Baltimore, Md., Dec. 1st, 1917.

Canners are greatly interested in the reports that the Government may commandeer the available supply of tin, thereby largely curtailing the manufacture of cans in 1918. Whatever action, if any, is taken in the matter may be announced officially in a short time. Newspaper reports on the subject should not be accepted as official until confirmed by the authorities in Washington. The necessities of the Army and Navy are paramount, of course, and it goes without saying that the Government does not intend to take steps that would bring about a shortage next season in the output of canned foods for our fighting men, abroad and at home, or cause a lack of supplies for the consumers in general. Do not, for the present at least, base your buying of canned foods on reports of a curtailment of the outpnt at the canneries next season. Buy them with confidence in their intrinsic value to the extent of your requirements for a reasonable period, according to the rules and regulations of the Food Administration, and you will have no regrets.

The decline in the prices of tomatoes has probably reached its limit. It may be a flash in the pan, but the character of the buying during the last two weeks indicaes that the pendulum has swung in that direction about as far as it is going. Markets which do not buy here when they can do as well nearer home have been steadily purchasing our tomatoes for prompt shipment at the going prices, not in large blocks, but in lots of one to three carloads, which means that the goods are needed for consumption, not for hoarding, and repeat orders will follow in due time. The difficulties of the transportation lines are not being lessened, and the jobber who has the goods in his possession may have an advantage worth while over his competitor who has no thought of the proverbial rainy day. At this time shipments from principal points can be made promptly. Our service is at your command.

Alert buyers have been picking up corn wherever obtainable on an attractive basis. The distribution out of first hands has been so general that our canners are in a sold-out condition never before experienced at this time of the year. Intending buyers may do well to cover their winter requirements promptly.

In the other lines of vegetables there was a fair demand for spinach, sweet potatoes and kraut for each of which the market appears to be in buyers' favor at the prevailing prices for high-class quality, but the remainder of the list was dull and uninteresting. Inquiries for peas did not result in actual orders, because the supply in ths market is almost negligible.

Next to nothing was done this week in canned fruits outside of pears, and the buying of them, as well, fell off materially. The stocks of all fruits here are so very light that the canners will have no trouble to dispose of them in little lots during the winter.

Scarcity of and high prices for raw oysters almost put the canners of cove oysters out of business this season, and there is no relief in sight. Until after the holiday season is over the canners will have but little chance to obtain any oysters because the shippers take the available supplies for the raw trade. Consequently, the offerings are extremely light at today's quotations. Should freezing weather set in the supply would be still smaller. THOS. J. MEEHAN & CO.

ABERDEEN, HARFORD COUNTY, MD.

Aberdeen, Md., Nov. 29, 1917.

Tomatoes.—While business generally has been rather quiet since the licensing plan went into effect, there are some buyers who have shown their confidence in the market, and have bought liberally in the last few weeks. Both packers and jobbers have now had time to fully digest the rules and regulations governing the sale and distribution of food commodities affected by the license and are gradually adjusting their business accordingly. There are certain features which have not yet been made clear, but the Food Administration are endeavoring to get these matters all straightened out as promptly as possible. We quote the present market on tomatoes as follows: 1s at 77½@80c; 9s, $1.00@1.05; 2s, $1.25; 3s, $1.77½@1.80; 10s, $7.00@7.25. All f. o. b. factory separate shipments.

Corn.—The corn market has been rather quiet and prices have eased off somewhat. C. W. BAKER & SONS.

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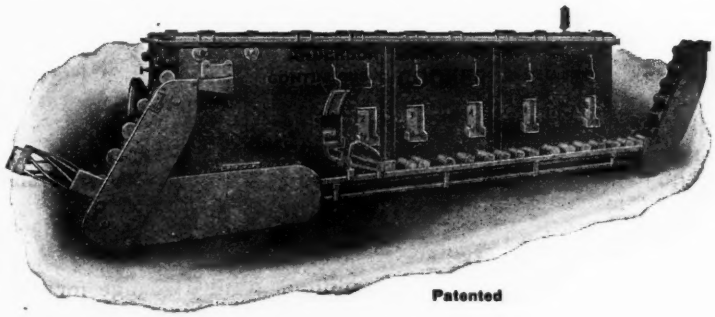

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MADE ALSO HANDIE TOMATO PASTE

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These two vital features have been successfully attained in the construction of our STANDARD CONTINUOUS COOKER giving it a distinction possessed by no other cooking device being offered to the Canner at the present time. Numerous Canners have now placed their order for next season's requirements and in view of transportation facilities, labor conditions and scarcity of material, it will pay you to figure with us at once.

ANDERSON-BARNGROVER MFG. CO.
333 W. Julian Street
SAN JOSE - - CAL.

S. O. RANDALL'S SON
409 Marine Bank Bldg.
BALTIMORE - MD.

Wanted and For Sale.

This is a page that must be read each week to be appreciated. You are unlikely to be interested every week, in what is offered here, but it is possible you will be a dozen times in the year. If you fail to see and accept your opportunity your time is lost, together with money. Rates upon application.

For Sale—Miscellaneous.

FOR SALE—One Mitchell gang slitter with seven (7) pair of cutters to take 30-inch stock. In good condition. Address W. W. Boyer & Co., Baltimore, Md.

FOR SALE.—One Renneburg Dryer, 30 feet long, with iron smoke box, stack and furnace. Also one scalper and screens. Address Southgate Packing Co., Norfolk, Va.

FOR SALE—One Johnson (Wheeling) water can tester, twenty-four pockets, equipped for No. 1, No. 2 and No. 3 cans. Good condition. Address W. W. Boyer & Co., Baltimore, Md.

FOR SALE — 500,000 labels for tomatoes, string beans and sweet potatoes, in No. 2 and No. 3 sizes; these labels are of special or private design, in five colors, gold and embossed; full privilege of use of private design goes with sale, or could be overprinted at small cost. Samples with prices on request. Address Box A-450, care The Canning Trade.

FOR SALE.—A perforating or cryptograph machine manufactured by American Perforator Co., Chicago, like new; a No. 70-40-45 equipped with 220 DC motor. Will sell for $175 f. o. b. Rochester. Address Stecher Lithographic Co., Rochester, N. Y.

FOR SALE—At reasonable prices, in good condition, with all parts complete:

4 complete sets Sprague Stirrers, Scrapers and Accelerators, complete with tight and loose pulleys, gears and frame. Used less than one week in 250 gallon copper jacketed kettles. Can be easily adjusted to fit other sized kettles.

3 Robins tomato pulp cyclones.

1 Ayars tomato pulp cyclone.

1 Sprague rotary squirrel-cage tomato washer.

2 Colbert rotary tomato filling machines for sanitary cans.

2 Victoria sweet potato peelers (for peeling potatoes, onions, carrots, etc.)

Price and full description upon application. Address Box A-462, care The Canning Trade.

For Sale—Cans.

FOR SALE.—About 15,000 cases No. 2 sanitary cans, cases, lids and can ends. In good condition; free from rust, dents, etc.; part in stenciled cases and part in plain cases, W. W. Boyer & Co. make. Address Edward V. Stockham, Perryman, Md.

For Sale—Books.

For Sale—The 225-page book "How to Buy and Sell Canned Foods," completely indexed; tells the buyer what to expect in each grade of the different goods; settles claims and prevents misunderstandings; $2.15 per copy, postage paid. Address THE CANNING TRADE, Baltimore Md.

For Sale—Factories.

FOR SALE—Canning factory near Annapolis, Anne Arundel county, Maryland. Large acreage can be procured; willing to take secured note to be paid in canned foods at end of the season. Address W. E. Robinson & Co., Belair, Md.

FOR SALE—Fully equipped, up-to-date cannery in Delaware, on Delaware Division of P. R. R.; spur direct to factory. Ample tomato acreage available; all new buildings; 60 H. P. boiler; supply of help nearby. Equipped to pack 25,000 cases season; excellent opportunity for experienced party; price reasonable. Address Box A-460, care The Canning Trade.

FOR SALE—A thoroughly equipped canning plant in New York State. Excellent location, convenient, plenty of acreage; brands well established. Satisfactory reason for selling. Address Box A-449, care The Canning Trade.

FOR SALE.—A canning plant fully equipped and up-to-date, for rapid and economical canning of tomatoes and pumpkins, including a distilled ice manufacturing plant, city water works, and small wood-working plant. All in good condition and in operation the year round, and situated in the heart of the best tomato and general farming country in the state of Indiana. On two railroad lines and incorporated. In a live town. Satisfactory reason for disposal. Act quick, as this will not be on the market very long. Address A455, care The Canning Trade.

Wanted—Miscellaneous.

WANTED—One Huntley or Plummer blancher; one 60-inch Colossus pea grader. Must be in first-class condition. Will exchange for the above or sell separately, the following: three No. 6 Ayars pea fillers; two Schmidt pea harvesters. All guaranteed to be in first-class working condition. Address A-440, care The Canning Trade.

WANTED.—Copper steam jacketed kettles, from 50 to 300 gallons capacity. State general condition. Address Box A-458, care The Canning Trade.

WANTED.—Lock seam can body maker. Give details and best price. Address Box A-453, care The Canning Trade.

WANTED.—To buy, apple peelings, apple cores, apple pomace, apple cider, dried apples and apple culls. Quote best price in car lots. Address D. Canale & Co., Memphis, Tenn.

EMPLOYMENT EXCHANGE.

Paid subscribers may use this column free, for securing either Positions or Help. It is conducted for the benefit of subscribers; we WANT you to make use of it whenever and as often as you wish. But advertisements will NOT be carried more than ONE MONTH unless special request is made. Non-subscribers will be charged for the use of this column.

When answering advertisements "care The Canning Trade," write only the BOX NUMBER on the envelope (in the lower left-hand corner); put a two-cent stamp on as usual, then place it in another envelope and address same to The Canning Trade. We will re-mail it to the advertiser.

SITUATIONS WANTED.

POSITION WANTED—Have had ten years' experience in building and running vinegar factories, both cider and distilled; also two years with a pickle and kraut company; best references. Address 246 Twenty-second St., Ogden, Utah.

POSITION WANTED—I will be open for a good position with progressive firm doing a good business, or prospects of same, who will appreciate quality and low cost of production. Ready January 1st. Position must be permanent and in good locality to educate children, in the South or temperate climate. Well qualified by past experience for any sized position. Address Box B-447, care The Canning Trade.

POSITION WANTED—As manager of a thoroughly progressive canning company. I have had twenty years' experience, covering every detail from the building and equipping of plant, contracting acreage, canning, financing and sale of product. Forty years old; strictly temperature. Will invest from $10,000 to $20,000 in the business, after first year—when saisfied as to safety of investment and congeniality of connection. Address Box B-452, care The Canning Trade.

POSITION WANTED—As superintendent and processor. Would like to connect January 1st. Am married; never touch liquor, long experience in packing fruits, vegetables and specialties. My baked beans are equal to Van Camp's. Competent to take charge of a three-line factory; understand all machinery for canning, sanitary and packers' styles. Best references. Address Box B-443, care The Canning Trade.

POSITION WANTED—Mechanical engineer, seven years' experence in designing and manufacturing canning machinery, thorough and practical mechanic, inventor of several devices used in the industry, desires position. Ready for new engagement after January 1st. Am steady and of good habits; used to traveling. Location no matter. Address Box B-456, care The Canning Trade.

POSITION WANTED—By experienced canned foods man, factory or road. Open January 1st; satisfactory reference. Address Box B-435, care The Canning Trade.

POSITION WANTED—Young man, reliable and capable, six years' experience as manager of one-line factory packing vegetables, desires change to position as assistant to manager of large plant. Can offer efficient and loyal service. Address Box B-448, care The Canning Trade.

HELP WANTED.

HELP WANTED — Experienced Cost man for large and progressive fruit and vegetable canning concern on the Pacific Coast. Must have knowledge of canning business; excellent opportunity for man of ability. State age, experience and minimum salary. Address Postoffice Box 3354, Ferry Station, San Francisco, Cal.

HELP WANTED—a high class man for packing superintendent is wanted by a large food product plant in New York City District. Must be experienced in packing methods and familiar with small package machinery. A good executive, capable of taking charge of a large force of employees will command a liberal salary. Reply must state experience and give references. Box B 457, care The Canning Trade.

HELP WANTED—A mechanical engineer familiar with canning machinery. Steady employment with progressive company. Address Box B-459, care The Canning Trade.

HELP WANTED—Jam maker; one with experience in making apple jelly jam preferred. Apply to Box B-461, care The Canning Trade.

DAILY TOMATO MARKET REPORT.

Tomato Section National Canners' Association.

The association assumes no responsibility for the accuracy of this report beyond the compilation of the figures submitted for publication.

Group A—Maryland, Delaware, Pennsylvania, West Virginia and the sections of Virginia known as Tidewater and Eastern Shore.
Group B—New Jersey.
Group C—New York, Connecticut and Massachusetts.
Group D—Indiana, Ohio,, Michigan, Illinois and Wisconsin.
Group E—Missouri, Kansas, Iowa and Minnesota.
Group F—South-West Virginia, Tennessee, Kentucky, Arkansas, Georgia, Mississippi, Louisiana, North Carolina and South Carolina.
Group G—Utah, Colorado, Nebraska, Idaho, Oregon, North Dakota aand South Dakota.
Group H—California.

Buyers' Labels are reported as B. L.; Unlabeled as U. L.

Group	Date of Sale	No. of Sales	Size	Total Cases	Grade	Price	Spots or Futures	Sold
No report issued since November 6th.								
Monday, November 26, 1917.								
E	11-14	1	2s	200	Standard	1.75	Spots	Factory
	19	1		11000	do	1.60	do	do
No report issued since November 22nd.								
Monday, November 26, 1917.								
A	11-22	6	3s	1075	Standard	1.75	Spots	Factory
		4	2s	490	do	1.25	do	do
		1	1s	1300	do	.77½	do	do
	23	1	3s	744	do	1.80	do	Balto.
	24	4		3043	do	1.75	do	Factory
		1	2s	200	do	1.25	do	do
No report issued since November 26th.								
Wednesday, November 28, 1917.								
A	11-26	2	2s	8000	Standard	1.22½	Spots	Factory
	27	1	3s	2000	do	1.75	do	do
B	26	1	10s	1000	do	7.00	do	do

LIMING SOILS IN WINTER.

Dr. H. J. Patterson, Director of the Maryland Agricultural Experiment Station, States That the Maryland Station has Gotten Good Results from Applying Lime During Winter.

Farm lands cannot be expected to yield full returns from the use of cover crops, manure, and fertilizers, nor can the labor of tilling sour soils be applied to the best advantage until they are limed. It is important to see that sour soils are limed and labor utilized efficiently if our country is to maintain and improve the production of crops necessary to feed our people and our allies.

The application of lime during winter will lighten the spring load of the railroads which are overtaxed even now, and it will tend to distribute farm labor through a longer season of the year. It is not a common practice to lime soils in winter, but in a crisis such as the present it is advisable. Dr. H. J. Patterson claims to have secured efficient results from winter liming. He has the following to say on this subject: "We have gotten very good results by applying lime during the winter as a top-dressing on wheat and fall seeded grass. We do not advise this as being the best method of applying lime, but lime applied in this way has proven beneficial both to the grain and grass which follows the wheat."

The farmers of the country should not hesitate to take advantage of this opportunity "to do their bit" and order lime now for immediate shipment, and in case hilly lands or some other condition make it impracticable to lime while the ground is frozen, it should be placed in storage ready for use in spring as soon as the ground is prepared. JOHN H. VOORHEES, Agronomist, the Agricultural Lime Bureau, Washington.

CANNED FOOD PRICES

Prices given represent the *lowest* figure generally quoted for lots of wholesale size, usual terms f. o. b. shipping station (unless otherwise noted) and subject to the customary discount for cash. ****Many canners get higher prices for their goods; some few may take less for a personal reason, but these prices represent the general market at this date.

Baltimore figures corrected by these Brokers: (‡)Thos. J. Meehan & Co. (†)T. G. Cranwell & Co. (§)E. C. Shriner & Co. (*) H. H. Taylor & Son. New York prices corrected by our special Correspondent.

CANNED VEGETABLES

	Balto.	N. Y.
ASPARAGUS*—(California)		
" No. 2½ White Mammoth	Out	$3 50
" " " Peeled, "	.....	.....
" " Green, "	.....	3 25
" " White, Large	Out	3 00
" " " Peeled, "	.....	.....
" " Green, "	Out	2 70
" " White, Medium	.....	2 80
" " Green, "	.....	2 50
" " White Small	.....	2 70
" " Green "	.....	2 40
" " Tips White Sq	2 85	2 75
" " " " Rnd	.....	.....
" " " Green, Sq	2 75	2 60
" " " " Rnd	Out	.....
BAKED BEANS†—No. 1, P'ain	1 00	1 02½
" " " 1, In Sauce	1 10	1 12½
" " " 2, Plain	1 55	Out
" " " 2, In Sauce	1 65	1 70
" " " 3, Plain	2 25	2 27½
" " " 3, In Sauce	2 25	2 30
BEANS†—No. 2 String, Standard Green	1 35	1 50
" " 10, " "	.....	Out
" " 2, " " Cut White	1 50	Out
" " 10, " " "	Out	Out
" " 2, White Wax Standard	1 40	Out
" " 10, " " "	.....	Out
" " 2, Limas, Extra	.....	.....
" " " Standards	1 85	Out
" " 2, " Soaked	1 20	Out
" " 2, Red Kidney, Stand	1 25	Out
BEETS†—No. 3, Small, Whole	Out	1 65
" " Medium, "	Out	Out
" " Large, "	Out	Out
" " Cut	Out	Out
CORN‡—No. 2, Std. Evgr., f.o.b. Balto.	1 60	Out
" " Std. Evgr., f. o. b. Co	1 60	.....
" " Std. Shoepeg f. o. b. Co.	1 75	.....
" " Std. Shoepeg f.o.b. Balto.	1 75	.....
" " Ex. Std. Shoepeg f.o.b. Co.	1 85	Out
" " Ex. Fcy Shoepeg f.o.b. Co.	1 90	.....
" " Std. Maine Style Balto.	1 65	1 80
" " Std. Maine Style f.o.b. Co.	1 65	Out
" " Ex. Std. Maine Style	Out	Out
" " Fcy. Mn. Style f.o.b. Bal.	Out	.....
" " Fancy f.o.b. County	Out	Out
" " Extra Std. Western	.....	.....
" " Standard Western	.....	1 80
HOMINY‡—No. 3. Lye	Out	.....
" " 3, Standard, Split	1 30	1 30
MIXED VEGETABLES FOR SOUP‡ } No. 2—12 Kinds	1 20	.....
" " 10 "	5 50	.....
OKRA AND TOMATOES‡ } No. 2, Standard	1 30	.....
" " 3, "	Out	Out
PEAS‡—No. 2, Early June Stand	1 50	1 55
" " Ex. Stand. Early Junes	1 60	1 65
" " Sifted	1 70	1 75
" " Extra Sifted	1 80	1 90
" " Extra Fine Sifted	1 90	Out
" " Petit Pois	Out	2 60
" " Early June Seconds	1 40	1 50
" No. 1, " " Standard	Out	Out
" " " " Sifted	Out	Out
" " " " Extra Sifted	Out	Out
" " Fancy Petit Pois	Out	Out
PUMPKIN‡—No. 3 Standard	1 30	1 40
" " 10, "	Out	4 25
" " 3, Squash	1 75	Out
" " 10, "	Out	Out
SAUERKRAUT‡—No. 2, Standard	1 05	1 30
" " 3, "	1 40	1 50
SPINACH‡—No. 3, Standard	1 70	2 00
" " 2, "	1 25	1 50
" " 10, "	6 00	7 20

CANNED VEGETABLE PRICES—Continued.

	Balto.	N. Y.
SUCCOTASH‡—No. 2, Green Beans	Out	Out
" " With Dry Beans	Out	Out
" " Maine	Out	.....
SWEET POTATOES‡—No. 3, Jersey	.....	1 65
" " Std. f.o.b. Bal.	1 50	1 65
" " Std. f.o.b. Co.	1 40	Out
" " 10 Std. f.o.b. Bal.	Out	Out
" " 10, Std. f.o.b. Co.	Out	.....
TOMATOES‡—No. 10, Fancy, f.o.b. Bal.	Out	Out
" " Jersey, " Fac'y	.....	Out
" " Stand., " Bal	7 00	7 60
" " Stand., " Co	7 00	.....
" " 3, Sani. 5½ in. cans	.....	Out
" " Jersey, f.o.b. Co	Out	Out
" " Ex. Std., " Bal.	Out	.....
" " Stand., " "	1 80	2 05
" " Stand., " Co	1 80	.....
" " Seconds, " Bal.	1 70	.....
" " 2, Stand., " "	1 25	1 45
" " Stand., " Co	1 22½	.....
" " Seconds, " Bal.	1 20	.....
" " 9, Stand., " "	1 05	.....
" " 1, Stand., " "	80	.....
TOMATO PULP‡—No. 10, Standard	8 00	.....
" " " 2, "	Out	.....
" " " 1, "	70	.....

CANNED FRUITS

APPLES—No. 3, (Me.)	.....	1 30
" " 10, (Mich.)	.....	4 75
" " 10, (N. Y.)	.....	5 75
APPLES‡—No. 10, (Md., Pa., Va.) f.o.b. Co	.....	4 75
" " 10, (Md., Pa., Va.) f.o.b. Bal	4 50	4 75
" " 3, (Md., Pa., Va.) f.o.b. Bal	1 25	.....
APRICOTS—No. 2½, Cala. Stand	.....	2 05
BLACKBERRIES§—No. 2, Standard	Out	Out
" " 10, "	Out	Out
" " 3, "	Out	Out
" " 2, Preserved	Out	Out
" " 2, In Syrup	Out	Out
BLUEBERRIES§—No. 2. Standard	Out	Out
" " 10, New Jersey	.....	.....
BLUEBERRIES—No. 10, Maine	.....	8 00
" " 2, Maine	.....	1 70
CHERRIES§—No. 2, Seconds, Red	Out	.....
" " " White	Out	.....
" Red " Stand. Water	Out	Out
" White " " Syrup	Out	Out
" " Ex. Preserved	Out	Out
" " Red Pitted	Out	.....
" Red " 10, Sour	.....	Out
GOOSEBERRIES§—No. 2, Stand	1 45	1 80
" " 8, "	Out	6 50
PEACHES*—No. 2½, Cal. Stand. L. C	2 15	2 05
" " 2½, " Ex. Std. "	2 40	2 25
PEACHES†—No. 1, Ex. Sliced Yellow	Out	Out
" " 2 Standard White	Out	1 45
" " " Yellow	.....	1 55
" " Ex. " "	.....	.....
" " Seconds White	Out	1 30
" " " Yellow	1 35	1 35
" No. 3 Standards, White	Out	2 05
" " " Yellow	Out	Out
" " Ex. " White	Out	Out
" " " " Yellow	Out	Out
" " Selected, Yellow	.....	Out
" " Seconds, White	Out	1 30
" " " Yellow	1 60	1 35
" " Pies Unpeeled	1 25	1 12½
" " " Peeled	.....	Out
" No. 10, " Unpeeled	4 50	3 75
" " " Peeled	.....	.....
PEARS†—No. 2, Seconds in Water	1 00	.....
" " Standards "	1 10	.....
" " Ex. " in Syrup	1 80	Out
" " 3, Seconds in Water	1 25	.....

CANNED FRUIT PRICES—Continued.

	Balto.	N. Y
PEARS†—No. 3, Standards in Water	1 30	Out
" " " Syrup	1 55	.....
" " Ex. " "	.....	Out
PINE-APPLE*— No. 2, Bahama Sliced Extra	Out	Out
" " " Grated "	1 60	1 80
" " " Sliced " Std.	Out	1 45
" " " Grated " "	1 30	1 32½
" " 2½, Hawaii Sliced Extra	2 40	2 65
" " " " Stand.	.....	2 45
" " 2, " " Extra	1 85	Out
" " " " Stand.	1 50	Out
" " " Grated Extra	1 60	Out
" " " Stand.	1 45	Out
" " 10, Shredded Syrup	Out	5 25
" " 10, Crushed Water	Out	4 75
" " 2, Eastern Pie Water	Out	.....
" " 10, " " "	Out	.....
PLUMS†—No. 2, Water	.....	.....
" " 2, Syrup	.....	.....
" " 10, Water	.....	.....
" " 1, Black, Water	.....	.....
" " " Syrup	.....	.....
" " Red, "	.....	.....
RASPBERRIES§—No. 2, Black Water	Out	Out
" " Red "	Out	Out
" " Black Syrup	Out	Out
" " Red "	Out	.....
" " 10, Black Water	Out	Out
STRAW-BERRIES§— No. 2, Ex. Stan. Syrup	Out	Out
" " Preserved	Out	Out
" " Extra Preserved	Out	2 05
" " Standard	Out	Out
" " 1, Extra Preserved	Out	Out
" " 1, Preserved	Out	1 20
" " 10, Standard Water	Out	11 00

CANNED FISH

HERRING ROE*—No. 2, Standard	2 00	.....
LOBSTER*—½-lb. Flats	.....	3 10
" 1-lb. Flats	.....	6 00
OYSTERS§— 5-oz. Standards	1 25	1 12½
" 4-oz. "	1 20	1 07½
" 10-oz. "	2 40	2 17½
" 8-oz. "	Out	Out
" 6-oz. Selects	1 85	1 75
SALMON—No. 1, Sockeye, Tall	.....	Out
" " 1, " Flat	.....	.....
" " ½, " "	.....	Out
" " 1, Red Alaska, Tall	.....	2 75
" " ½, " Flat	.....	.....
" " 1, Cohoe, Tall	.....	Out
" " 1, Flat	.....	Out
" " ½, "	.....	Out
" " 1, Pink, Tall	.....	2 00
" " ½, " "	.....	.....
" " 1, Columbia, Tall	.....	Out
" " 1, " Flat	.....	3 40
" " ½, " "	.....	2 60
" Chums, Talls	.....	1 85
" Medium Red, Talls	.....	2 50
SHRIMPs—No. 1½, Wet or Dry	Out	2 50
" " 1, " " "	Out	1 25

CANNERS' METALS

	5 to 10 tons	1 to 4 tons
PIG TIN—Straits	61 37½	61 50
" Malacca	61 37½	61 50
PIG LEAD—Omaha or Federal	9 92½	9 00

	½x½	9x10	8x10
SOLDER—Drop an (Bar	37	36	35
Wire Coil	37	36	35
" Wire Segments	37	36	35

TIN PLATES — F. O. B. MILL

14x20, 107 lbs., Base Coke Tin Plate 8 00
14x20, 100 lbs., " Coke Tin Plate 7 75

American Can Company Can Prices

Baltimore, April 16th, 1917.

American Can Company announces the following prices for Packers Cans, Bulk Carloads, f o. b. shipping points, effective April 16th, 1917, subject to its confirmation and subject to change without notice.

SANITARY CANS

No. 1		$18.25 per m.
No. 2		25.75 per m.
No. 2	Diameter x 4 in. high	25.25 per m.
No. 9	(No. 2 Diameter x 3 5-16 in. high)	24.75 per m.
No. 2½		33.00 per m.
No. 3	4⅛ in.	35.25 per m.
No. 3	5 in.	35.75 per m.
No. 3	5⅛ in.	38.50 per m.
No. 10		75.50 per m

HOLE AND CAP CANS

	Opening	
No. 1	1⅜ in. or 1⅛ in.	$16.75 per m
No. 2	1⅜ in. or 1⅛ in.	23.50 per m.
No. 2	Diameter x 4 in. high, 1⅛ in. opening	23.00 per m.
No. 9	(Diameter x 3 5-16 in. high, 1⅛ in. opening)	22.50 per m.
No. 2½	2 1-16 in.	31.00 per m.
No. 3	2 1-16 in.	33.25 per m.
No. 10	2 1-16 in. or 2¼ in.	75.00 per m.

SOLDER HEMMED CAPS, WITH CANS

1⅜ in 1⅛ in	$1.65 per m.
2 1-16 in.	2.40 per m.

AMERICAN CAN COMPANY.

Continental Can Company, Inc. will quote prices on Cans on application.

SANITARY CANS—Official Standard Sizes

Trade Name	Diameter	Height
No. 1	2 11-16	4
No. 2	3 7-16	4 9-16
No. 2 Special	3 7-16	4
No. 2½	4 1-16	4¾
No. 9	3 7-16	3 5-16
No. 3 4⅞ in.	4¼	4⅞
No. 3 5 in.	4¼	5
No. 3 5⅛ in.	4¼	5⅛
No. 10	6 3-16	7

Linseed Oil Generally the Vehicle of Protective Paint.

It is probably true that 90% of the paint used for the protection of metal surfaces, subject to the attacks of climatic conditions, is linseed oil paint.

In a general way, linseed oil paints consists of a mixture of linseed oil, a solid pigment, and a preparation of metallic salts called driers.

Many attempts have been made to improve on linseed oil as a paint vehicle but without success.

Dixon's Silica-Graphite Paint

is made in First Quality Only and for over fifty years has been used by all leading industrial concerns in the world.

Only pure boiled linseed oil and flake graphite are used in its manufacture.

Write for Booklet No. 131B.

Made in JERSEY CITY, N. J., by the

JOSEPH DIXON CRUCIBLE COMPANY

ESTABLISHED 1827

DIAMOND-F

KEEPING FOOD CLEAN AND FRESH.

Properly packed packages make a hit with the customer. Choosing the right protective paper is of great importance. Use Diamond F Protective Papers and be assured of the best that modern machinery and human hands can produce.

Seal foods against all possibility of contamination. Wrap them with Diamond-F Greaseproof, Vegetable Parchment or Parchmoid

Diamond-F Greaseproof is a modified form of the famous Diamond-F Glassine and is not super-calendered. It resists oil and air and is free from all corrosive compounds.

Diamond-F Vegetable Parchment. a waterleaf paper chemically treated, has great strength and resist air, moisture, grease and oil. It does not disintegrate in water.

Diamond-F Parchmoid is a parchmentized, super-calendered paper, very resistant to greases.

Diamond-F Filter Paper is U. S. Government-tested.

Diamond-F Quality-Price-Delivery will please you. Let us help you select your papers. Write today for samples.

DIAMOND STATE FIBRE COMPANY

Bridgeport, Pennsylvania (near Philadelphia)

THE KNAPP WAY

of labeling suits mighty well. Nothing just like it. Lots of difference between an automatic labeler and one that is not. "Hit and miss" don't pay. Long ago we tried to get what we are now so proud to show—The **Knapp Automatic.** These machines give splendid results, made for one size can or adjustable.

Our rebuilt labelers are up-to-date, all new but the frames. We guarantee them fully.

Write us for proposition on new or rebuilt labelers

The FRED. H. KNAPP COMPANY

Baltimore = = = Maryland

Berger & Carter Co., San Francisco, Cal. The Brown-Boggs Co. Ltd., Hamilton, Ontario

JEROME B. RICE SEED CO.

CAMBRIDGE, N. Y.

We are headquarters for the best of everything in

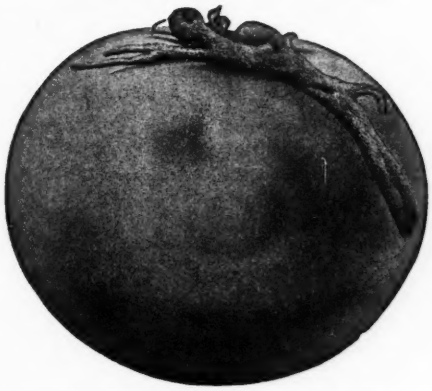
SEEDS

used by Canners Everywhere

Tomato—LANDRETHS' Red Rock

RIPENS fruit 110 days from sprouting of the Seed. A surprisingly choice sort, exceedingly solid, or in other words free from water. Shape round or full bottomed, smooth as an apple, free from splits, small cavity at stem end, borne in clusters. Vine very healthy.

Compared with Stone, the only sort with which it can be compared, it is rounder, a deeper red, more solid or meaty, larger fruited, more showy, more productive, and earlier by a week.



In other words, in all particulars the Stone is behind in the race. This is unquestionably so, as Landreths' Red Rock is undoubtedly the best large red medium early Tomato in use, and in fact it has been counterfeited by those who have not got it in perfection. Beware of counterfeit stocks of Landreths' Red Rock in its original purity of so many great excellences. It, like all other Landreth Grown Tomatoes, can only be bought in sealed, lithographed, cardboard boxes of ¼ and ½ lbs.

Price in ¼ or ½ lb. packages, $4.00 per lb. irrespective of quantities

Ask for Prices on any thing in the seed line you need.
We grow all varieties of Seed used by Canners.

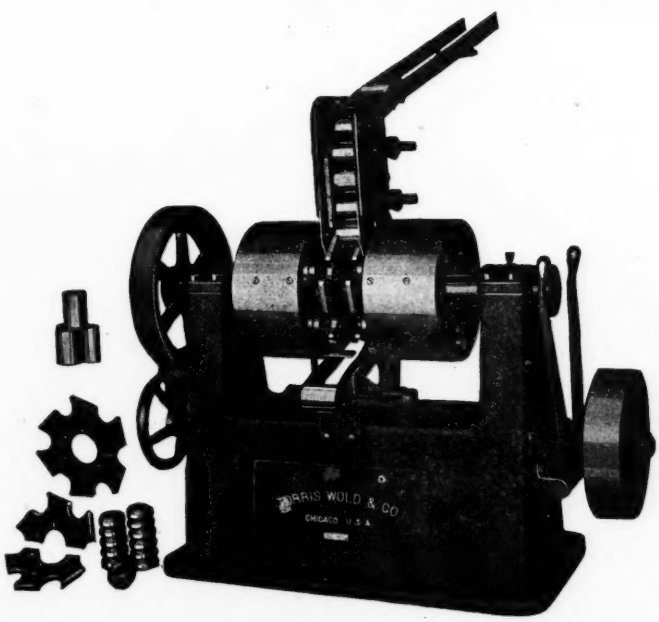
D. Landreth Seed Company Bloomsdale Seed Farms FOUNDED 1784 **Bristol, Penn.**

The largest growers of Tomatoes for Seed Purposes on their own ground in the world

8

AUTOMATIC ROUND CAN FLANGER

FOR SANITARY OR OPEN TOP CANS



This machine is used for flanging or rimming both ends of the can at one time. It is supplied with six flanging heads, and is entirely automatic, making a perfect and uniform flang on both ends of the can.

It is fitted with friction clutch, and can be stopped or started instantly.

It will take in cans from 1¾ to 5⅝ in. in diameter by 2 to 8 in. in height at a speed of 200 cans per minute.

It is easily adjusted from one size can to another.

We build a Complete Line of Sanitary Can Making Machinery.

TORRIS WOLD & CO.

240 N. Ashland Ave.

CHICAGO - - ILLINOIS

Makers of High Class High Speed Automatic Can Machinery, Presses, Dies, Etc.

WHERE TO BUY

(See advertisements for details.)

MACHINERY and SUPPLIES

Air Pumps.
Max Ams Machine Co., Bridgeport, Conn.

Books on Canning, Preserving, Etc.
"A Complete Course in Canning," $5.00.
"How to Buy and Sell Canned Foods," $2.15
"History of Canning Industry," $1.00.
"1917 Almanac of the Canning Trade," $1.00. Address The Canning Trade, Baltimore, Md.

Bottle Capping, Corking, Filling Machines.
Max Ams Machine Co., Bridgeport, Conn.

Bottle Labeling Machines.
Economic Machinery Co., Worcester, Mass.

Boxes and Box Shooks.
Canton Box Co., Baltimore, Md.
H. D. Dreyer & Co., Baltimore, Md.
J. M. Raffel Co., Baltimore.
Strong Box Co., Baltimore.

Boxing Machines.
Fred H Knapp Co., Baltimore, Md.

Brokers.
Crary Brokerage Co., Waukesha, Wis.
Louis Hilfer Co., Chicago, St. Louis.
Seggerman Bros., New York City.

Cans and Solder Hemmed Caps.
American Can Co., New York, Baltimore, Chicago, San Francisco.
Atlantic Can Co., Baltimore.
W. W. Boyer & Co., Baltimore.
Boyle Can Co., Baltimore.
Continental Can Co., Syracuse, Chicago, Baltimore.
Johnson-Morse Can Co., Wheeling, W Va.
Phelps Can Co., Baltimore, Md.
Southern Can Co., Baltimore.

Can Cleaning Machine.
A. K. Robins & Co., Baltimore

Can Making Machinery—Sanitary and Regular.
Max Ams Machine Co., Bridgeport, Conn.
E. W. Bliss Co., Brooklyn, N. Y.
E. J. Judge, San Francisco.
E. J. Lewis, Middleport, N. Y.
John R. Mitchell Co., Baltimore.
Stevenson & Co., Baltimore.
Torris Wold & Co., Chicago, Ill.

Can Washing Machine.
Sprague Canning Machinery Co., Chicago.

Capping Machines, Power and Hand.
Max Ams Machine Co., Bridgeport, Conn.
Ayars Machine Co., Salem, N. J.
A. K. Robins & Co., Baltimore, Md.
Sprague Canning Machinery Co., Chicago.

Capping Steels.
Max Ams Machine Co., Bridgeport, Conn.
Edw. Renneburg & Sons Co., Baltimore.
A. K. Robins & Co., Baltimore, Md.
Schlutter-Zastrow Mach. Co., Baltimore.
Sinclair Scott Co., Baltimore, Md.
Stevenson & Co., Baltimore.
H. R. Stickney, Portland, Maine.

Catsup Machines.
Sinclair Scott Co., Baltimore, Md.
Sprague Canning Machine Co., Chicago.

Consulting Experts.
W. L. Hinchman, Haddonfield, N. J.
P. A. Van Heeden, Jersey City, N. J.

Continuous Agitation Cookers.
A. K. Robins & Co., Baltimore, Md.
Sprague Canning Machinery Co., Chicago.

Corn Cookers, Fillers and Mixers.
Ayars Machine Co., Salem, N. J.
A. K. Robins & Co., Baltimore, Md.
Sprague Canning Machinery Co., Chicago.

Corn Huskers—Silkers, Butters.
Peerless Husker Co., Buffalo, N. Y.

Conveyors—All Kinds.
Mathews Gravity Carrier Co., Elwood City, Pa.
Weller Mfg. Co., Chicago.

Cranes and Carrying Machines.
Mathews Gravity Carrier Co. Elwood City, Pa.
A. K. Robins & Co., Baltimore, Md.
Schlutter-Zastrow Mach. Co., Baltimore
Sinclair Scott Co., Baltimore, Md.
Sprague Canning Machine Co., Chicago.

Crates (Iron Process)
Edw. Renneburg & Sons Co., Baltimore.
Schlutter-Zastrow Mach. Co., Baltimore

Directory of Canners.
Nat. Canners Assn., Washington, D. C.

Electric Machinery.
General Electric Co., Schenectady, N. Y.
Westinghouse Elect. & Mfg Co., E. Pittsburgh, Pa.

Engines, Boilers, Fittings, etc.
Edw. Renneburg & Sons Co., Baltimore.
A. K. Robins & Co., Baltimore, Md.
Weller Mfg. Co., Chicago.

Exhaust Boxes (Steam, Continuous).
Ayars Machine Co., Salem, N. J.
Peerless Husker Co., Buffalo, N. Y
Sprague Canning Machine Co., Chicago.

Factory Chairs, Stools, Etc.
A. K. Robins & Co., Baltimore

Filling Machines—All Kinds.
Ayars Machine Co., Salem, N. J.
A. K. Robins & Co., Baltimore, Md.
Peerless Husker Co., Buffalo, N. Y.
Sinclair Scott Co., Baltimore, Md.
Sprague Canning Machinery Co., Chicago.
Henry R. Stickney, Portland, Maine.

Finishing Machines
A. K. Robins & Co., Baltimore
Sinclair Scott Co', Baltimore.
Sprague Canning Mchy. Co., Chicago.

Flux
Grasselli Chemical Co., Cleveland, O.
A. K. Robins & Co., Baltimore, Md.

Gears, Silent.
General Electric Co., Schenectady, N. Y.

Insurance.
Canners Exchange, Chicago.
(Lansing B. Warner, Manager.)

Kettles, Process and Jacketed.
Edw. Renneburg & Sons Co., Baltimore.
A. K. Robins & Co., Baltimore, Md.
Schlutter-Zastrow Mach. Co., Baltimore
Sinclair Scott Co., Baltimore, Md.
Sprague Canning Machinery Co., Chicago.

Labels.
R. J. Kittredge & Co., Chicago.
Brandon Printing Co., Nashville, Tenn.
Calvert Litho. Co., Detroit, Mich.
Simpson & Doeller Co., Baltimore.
Stecher Litho. Co., Rochester, N. Y.
U. S. Printing & Litho. Co., Cincinnatti & Baltmare

Labeling Machines.
Economic Machinery Co., Worcester, Mass.
Fred H. Knapp Co., Baltimore.

Lacquer.
John G. Maiers' Sons, Baltimore.
Seely Bros., Blaine, Wash.

Lacquering Machines.
Seely Bros., Blaine, Wash.

Meters-Flow, Steam, Air and Gas.
General Electric Co., Schenectady, N. Y.

Motors, Electric.
General Electric Co., Schenectody, N. Y.
Westinghouse Elect. & Mfg. Co., E. Pittsburgh, Pa.

Nailing Machines.
E. J. Judge, San Francisco.

Oyster Machinery.
Edw. Renneburg & Sons Co., Baltimore.
Schlutter-Zastrow Mach. Co., Baltimore

Paints.
Jos. Dixon Crucible Co., Jersey City, N. J.

Paper Boxes.
J. M. Raffel Co., Baltimore.
Strong Box Co., Baltimore.

Parchment (Paper) Caps.
Diamond State Fibre Co., Bridgeport, Pa.

Paring Machines, Apples, etc.
E. J. Lewis, Middleport, N. Y.
Sinclair Scott Co., Baltimore, Md.

Paste.
Fred H. Knapp Co., Baltimore.
E. J. Judge, San Francisco.

Pea Cleaners.
E. J. Judge, San Francisco.

Pea Machinery.
Sprague Canning Machinery Co., Chicago.

Pea Separators or Graders.
Edw. Renneburg & Sons Co., Baltimore.
A. K. Robins & Co., Baltimore, Md.
Sinclair Scott Co., Baltimore.
Sprague Canning Machinery Co., Chicago.

Peeling Tables—Tomatoes.
Ayars Machine Co., Salem, N. J.
Sprague Canning Machinery Co., Chicago.

Pineapple Machinery.
E. J. Judge, San Francisco.
E. J. Lewis, Middleport, N. Y.
John R. Mitchell Co., Baltimore.
A. K. Robins & Co., Baltimore, Md.
Schlutter-Zastrow Machine Co., Balto.
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Stevenson & Co., Baltimore.

Protective Papers.
Diamond State Fibre Co., Bridgeport, Pa.

Pulp Machinery.
Sinclair Scott Co., Baltimore.
Sprague Canning Machinery Co., Chicago.
Weller Mfg. Co, Chicago.

Pump—refuse skins, etc.
A. K. Robins & Co., Baltimore, Md.

Sanitary Cans and Closing Machines.
American Can Co., New York, Baltimore, Chicago, San Francisco.
Atlantic Can Co., Baltimore.
Boyle Can Co., Baltimore.
W. W. Boyer & Co., Baltimore.
Continental Can Co., Syracuse, Chicago, Baltimore.
Johnson-Morse Can Co., Wheeling, W Va.
Phelps Can Co., Baltimore, Md.
Sanitary Can Co., New York City. (Indianapolis, Bridgeton.)
Southern Can Co., Baltimore.

Sanitary Can Making Machinery.
See "Can Making Machinery."

Seeds.
J. Bolgiano & Son, Baltimore.
D. Landreth Seed Co., Bristol, Pa.
Leonard Seed Co., Chicago., Ill.
J. B. Rice Seed Co., Cambridge, N. Y.

Sieves and Screens.
Sinclair Scott Co., Baltimore.

Scalder, Tomato, etc.
Ayars Machine Co., Salem, N. J.
Edw. Renneburg & Sons Co., Baltimore.
A. K. Robins & Co., Baltimore, Md.
Sprague Canning Machinery Co., Chicago.

Solder Cap Hemming Machines.
Torris Wold Co., Chicago.

Storage Warehouses.
Brokers Office and Warehouse Co., Kansas City, Mo.
Wakem & McLaughlin, Inc., Chicago.

String Bean Machinery.
E. J. Lewis, Middleport, N. Y.
Sprague Canning Machinery Co., Chicago

Syrupers (Automatic).
Ayars Machine Co., Salem, N. J.
E. J. Judge, San Francisco.
Peerless Husker Co., Buffalo, N. Y.
Sprague Canning Machinery Co., Chicago.

Tin Plate.
American Sheet & Tin Plate Co., Pittsburgh, Pa

Trade Marks Registered.
Edw. Duvall, Washington.

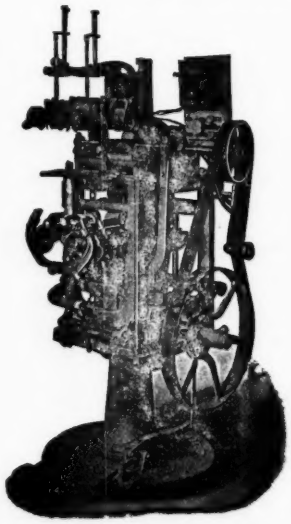
Turbines—Steam.
General Electric Co., Schenectady, N. Y.
Westinghouse, Elect. & Mfg. Co., E. Pittsburgh, Pa.

Washers—Fruits and Vegetables.
Ayars Machine Co., Salem, N. J.

Wipers, Can.
Ayars Machine Co., Salem, N. J.

Your requirements are

Accurate and Uniform Labeling



World Labeler, Improved

and to give you practical and satisfactory results they must be furnished by a labeler that is of durable construction, that can be easily cared for and that will stand up and operate under the strain of your short, swift bottling season. This year you can count on all these points from

World Labeler, Improved

because our designers have made a special study of your work and developed a catsup wiper mechanism operating on a positive mechanical principal. This properly designed wiper together with our reputation for building machines that stand the pace, make it possible for you to be sure in advance of an entire absence of trouble for the canning season so far as labeling is concerned.

Let us Talk this over by Mail Now Then Both of Us will be ready when the Rush Comes.

ECONOMIC MACHINERY CO., Worcester, Mass.

THE RUST PROOF CAN

WRITE us for a SAMPLE and we will mail you a HANDSOME LACQUERED RUST PROOF CAN.

RUST PROOF because it will resist all of the ordinary conditions that CAUSE RUST IN CANNED FOODS

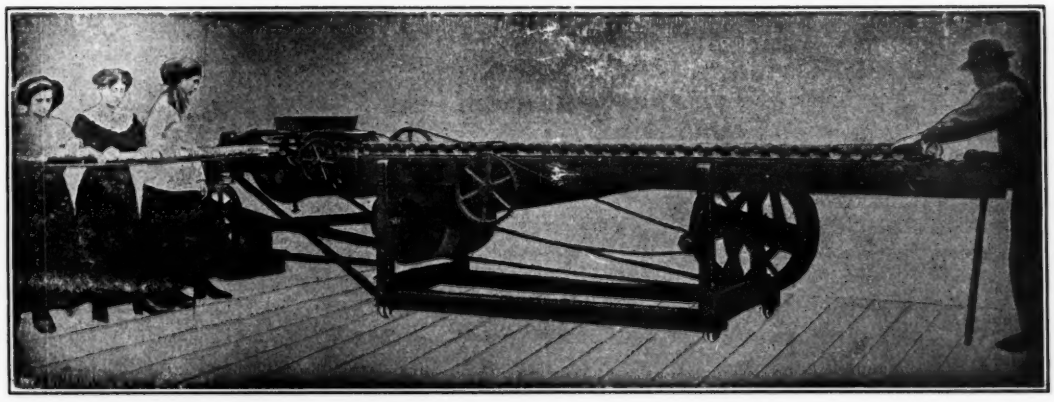
HANDSOME because it is of a BRILLIANT GOLDEN COLOR and immediately ATTRACTS the eye of a CUSTOMER.

THIS is the COMBINATION that the trade APPROVES and is what the trade WANTS. A BRILLIANT LACQUERED RUST PROOF CAN.

The MACHINE ILLUSTRATED below is the one that effects this COMBINATION. The POPULAR MACHINE that MAKES LACQUERING EASY. The MACHINE that is used by many of the most prominent canners in the UNITED STATES.

The BENEFITS of this process are worth ten times its TRIFLING COST. Write us today for the SAMPLE CAN and full particulars of the MACHINE.

The Hughlett Can Lacquering Machine in Operation



SHOWING HOW THE WORK IS DONE

SEELY BROS. Sole Manufacturers ***Blaine, Wash., U. S. A.***

CHICAGO CANONSBURG BALTIMORE NEW YORK SYRACUSE

CONTINENTAL CAN CO., Inc.

TO THE CANNING TRADE:

We have five of the largest and best equipped Can Factories in America, making all types of cans for canning house purposes; including hole-and-cap cans, with solder hemmed caps, and open-top (or sanitary) cans, which we sell in conjunction with our famous Continental Closing Machines.

Our Cans and Closing Machines are without exception the best in the country; our shipping facilities are unexcelled, and the personal attention we give to each and every order, makes our service to our customers unique in its efficiency.

The factory nearest you will give you any information you require—write us.

CONTINENTAL CAN COMPANY, Inc.

Thos. G. Cranwell, President.

In this Issue---Meeting Maryland Canners' Association

THIS IS THE 2096th ISSUE OF

THE CANNED FOOD AUTHORITY OF THE WORLD

BALTIMORE, MONDAY, DECEMBER 10, 1917

"Best by Test"

THE SANITARY CAN
WITH
THE SANITARY GASKET

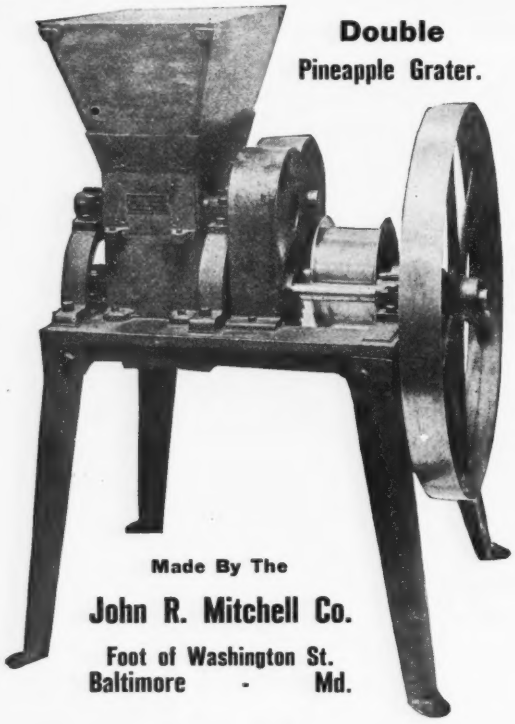
American Can Company

Chicago
Rochester, N. Y.
Portland, Ore.

NEW YORK

Baltimore, Md.
San Francisco, Calif.
Hamilton, Ont.

Buying well is half the game! The best the market affords in supplies and machinery is always



Double
Pineapple Grater.

Made By The

John R. Mitchell Co.

Foot of Washington St.
Baltimore - Md.

ESTABLISHED 1894

W. L. HINCHMAN, PH. G.

CONSULTING CHEMIST

EXPERT IN CANNING AND PRESERVING
AND FOOD MANUFACTURING

HADDONFIELD, N. J.

CANNED GOODS EXCHANGE

Year 1916–1917

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Vice-President, BENJAMIN HAMBURGER

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WHEELING CANS

Excel in

STRENGTH

and

CLEANLINESS

JOHNSON-MORSE CAN CO.

WHEELING, W. VA.

AN ALROUND CANNING TOMATO

Bolgiano's "Greater Baltimore"

JUST DOUBLES THE YIELD

THE WORLD'S GREATEST CANNING TOMATO

The Best Tomato Both For Canner And Grower
Ripens Right Up To The Stem—Eliminates Waste
From Ten Days To Two Weeks Earlier Than The Stone
No Cracked Stem Ends. A Good Blight Resister

Expressions From The Trade

As to the Yield and Quality of Bolgiano's "Greater Baltimore" Tomato

J. L. & J. O. MARSHALL

J. Bolgiano & Son, Baltimore Md. — Lewes, Del., Nov. 26th. 1917

Gentlemen:

I wish to state that the "Greater Baltimore" as compared with the other varieties used by our growers showed a superiority in every way. The farmers sowing this variety of seed had stronger and better plants and at harvest the fruit in quality and in quantity ranked highest.

(Signed) *J. L. & J. O. Marshall.*

RUBICON PRESERVE COMPANY
QUALITY PRODUCTS

J. Bolgiano & Son, Baltimore Md. — BROWNSVILLE, IND., Nov. 21st. 1917

Gentlemen:

We are very glad to inform you that the "Greater Baltimore" Tomafo Seed purchased from you came up to our expectations in every particular. We were ten days ahead of the factories using the Stone. In fact, some of the growers who were not able to get their plants in the field before the first of July made money on their Tomato Crop which is a very unusual occurance in this section. The color of the fruit was excellent and we were not troubled with cracked stem ends.

(Signed) *W. D. McAbee. Secretary.*

J. Bolgiano & Son, Baltimore Md. — A. M. MOORE, Cambridge, Md., Nov. 15th, 1917

Gentlemen:

We consider the "Greater Baltimore" Tomato the best ever for both Canner and Planter. For the Planter because of a sure crop for the Canner because it ripens right up to the stem, thus doing away with waste compared with other varieties. As you remember last year one lot of our Greater Baltimore Seed went astray and one of our growers had to substitute something else and from these received practically no crop at all while from Greater Baltimore Seed received in a prior shipment he reaped a splendid crop. (Signed) *A. M. Moore.*

The Sears and Nichols Canning Company
Vegetables in Tin and Glass

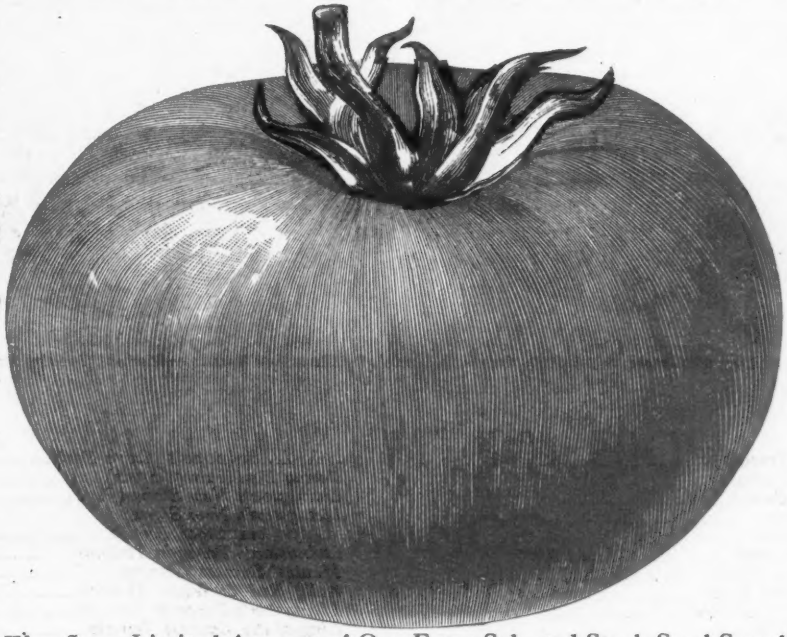
J. Bolgiano & Son, Baltimore Md. — Chillicothe, Ohio, Nov. 22nd. 1917

Gentlemen:

We beg to say that while we have usually grown the Stone Tomato in the past as our principal crop, yet for the last two seasons, at our New Castle, Ind. plant we have used some Greater Baltimore in a small way and find that in this section, it is just as prolific in yield about the same size and from ten days to two weeks earlier than the Stone. (Signed) *The Sears and Nichols Canning Co.*

Can You Afford to Take a Chance? Why Not Profit from the Experiences of Others?

Put up in any Size Package to Suit Your Needs



$4.00 Pound Shipped When You Desire

We offer a Limited Amount of Our Extra Selected Stock Seed Saved
Entirely from Crown Set Fruit of the Most Prolific Plants at $5.00 per Pound

1818 **J. Bolgiano & Son** 1917

Growers of Pedigreed Tomato Seed

99 YEARS SELLING TRUSTWORTHY SEEDS

BALTIMORE, MD. U. S. A.

12-7-17

See Our Advertisement on the Other Side.

ORIGINATOR'S STOCK

Bolgiano's "John Baer" Tomato

NORTHERN GROWN

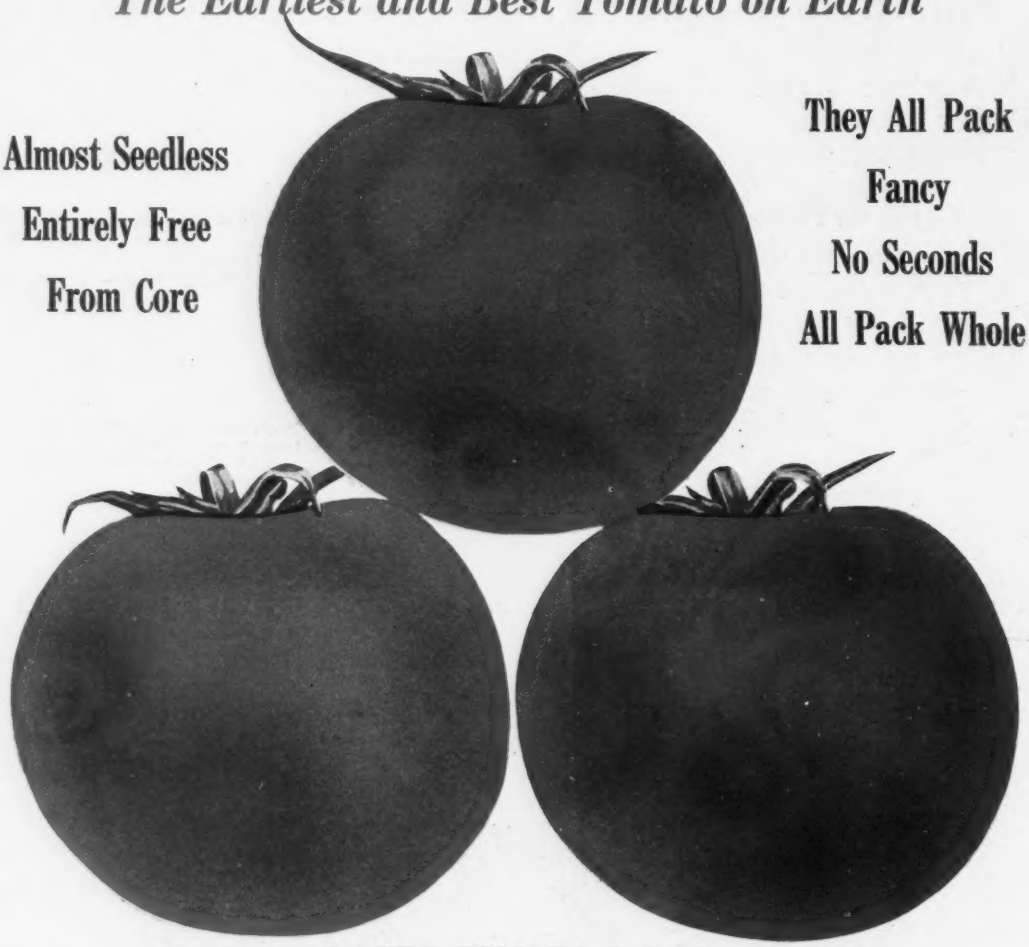
The Packers' Ideal

The Earliest and Best Tomato on Earth

Almost Seedless

Entirely Free

From Core



They All Pack

Fancy

No Seconds

All Pack Whole

"JOHN BAER" TOMATO $10.00 per pound

Produces An Enormous Crop Of Perfect, Solid, High Crown Beautiful, Brilliant Red Tomatoes Ripened Evenly Right Up to the Stem

Wholesale Tomato Seed Prices To Canners Only

Terms: March 1st., 2% 30 Days or 60 Days Net.

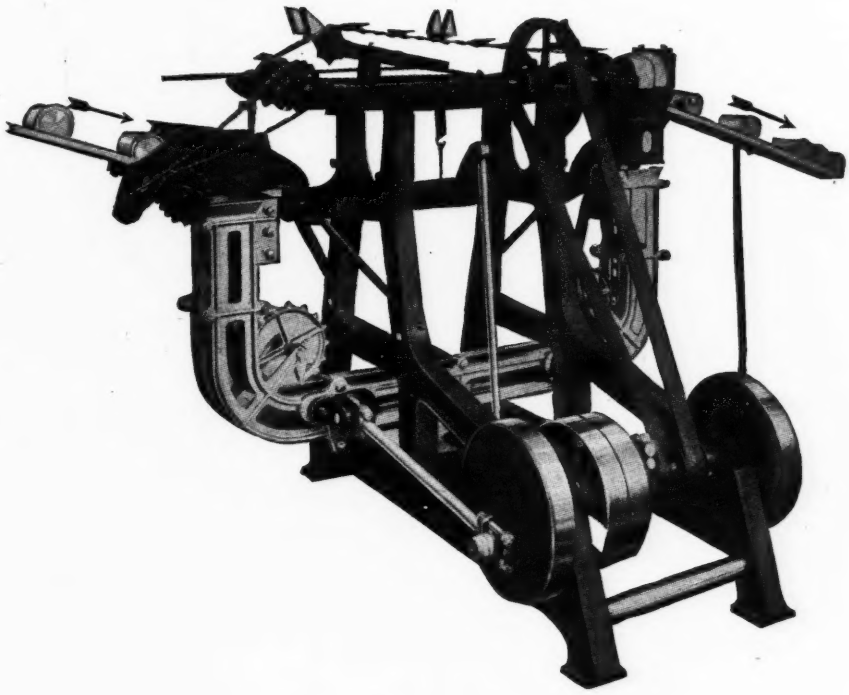
	Per Lb.
Greater Baltimore Tomato	$4.00
Greater Baltimore Tomato, (Special Stock Seed,)	5.00
My Maryland Tomato	4.50
My Maryland Tomato (Special Stock Seed)	6.00
The Great B. B., Bolgiano's Best	3.50
Red Rock, Extra Fine Stock	4.00
Red Rock (Special Stock Seed.)	5.00
Burpee's Matchless Tomato	3.50
Livingston's Perfection Tomato	3.50
Brinton's Best Tomato	3.50
World's Fair Tomato	3.50
Bolgiano's New Century Tomato	4.00
Bolgiano's New Queen Tomato	3.50
Dwarf Stone Tomato	4.00

	Per Lb.
I. X. L., Bolgiano's Extra Early	$4.50
Bonny Best (Purest Stock)	4.00
Livingston's New Stone (Pure)	3.50
Livingston's New Stone, (Special Stock Seed)	4.50
Livingston's Paragon Tomato	3.50
Maules' Success Tomato	3.50
Kelly Red or Wade Tomato	4.00
Livingston's Favorite Tomato	3.50
King of the Earliest Tomato	4.00
Spark's Earliana Tomato (Langdon's)	4.00
Chalk's Jewel Tomato (Pure)	4.00
Ten Ton Tomato	3.50
New Jersey Red Tomato	3.50
Trophy Tomato	3.50

J. Bolgiano & Son **BALTIMORE, MD. U. S. A.**

See Our Advertisement on the Other Side

Ayars Machine Company, Salem, New Jersey.



CORN SHAKER

FOR SHAKING CANS OF CORN BEFORE SHIPPING TO GIVE THE CONTENTS A RICH CREAMY APPEARANCE.

Ayars Machine Company, Salem, New Jersey.

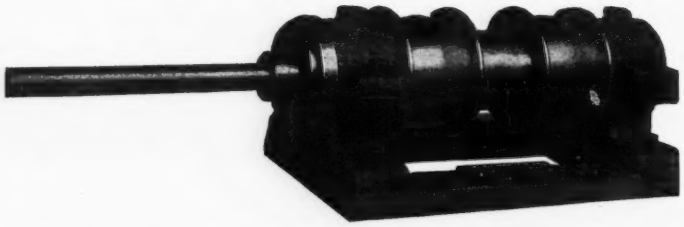
BROWN, BOGGS CO., LTD., HAMILTON, ONT., Sole Agents for Canada.

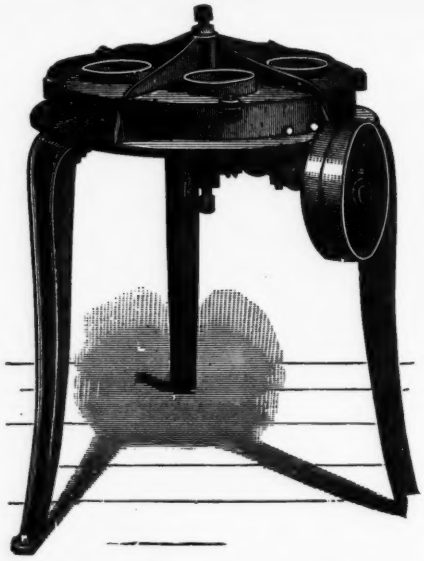
Stevenson & Co., Inc.

PINEAPPLE MACHINERY

Cut on the right represents machine for SLICING Pineapples from 3/16 to ¾ of an inch in thickness; every slice cut even and of same thickness. It is easily adjustable; made substantial and durable. Made either for hand or steam power. The legs are sufficiently splayed to admit placing of tub under the machine. CAPACITY: the pack of any ordinary house. Speed of machine, 75 revolutions per minute. Tight and loose pulleys, 8 inch diameter, 2 inch face.

Cut below represent Pineapple CORING machine with ample capacity to suit any ordinary house. Speed 400 revolutions per minute. Pulleys 3½ inch diameter, 2 inch face.





STEVENSON & CO., Inc.

601 South Caroline St.

BALTIMORE - - MARYLAND

Also Manufacturers of CAN MAKING MACHINERY

THE U.S.

Printing & Lithograph Co.

CREATORS OF

GOOD LABELS

BALTIMORE - NEW YORK

CINCINNATI

Baltimore Office & Works - Cross, Covington & Sander Sts.

TOMATO PULP MACHINERY

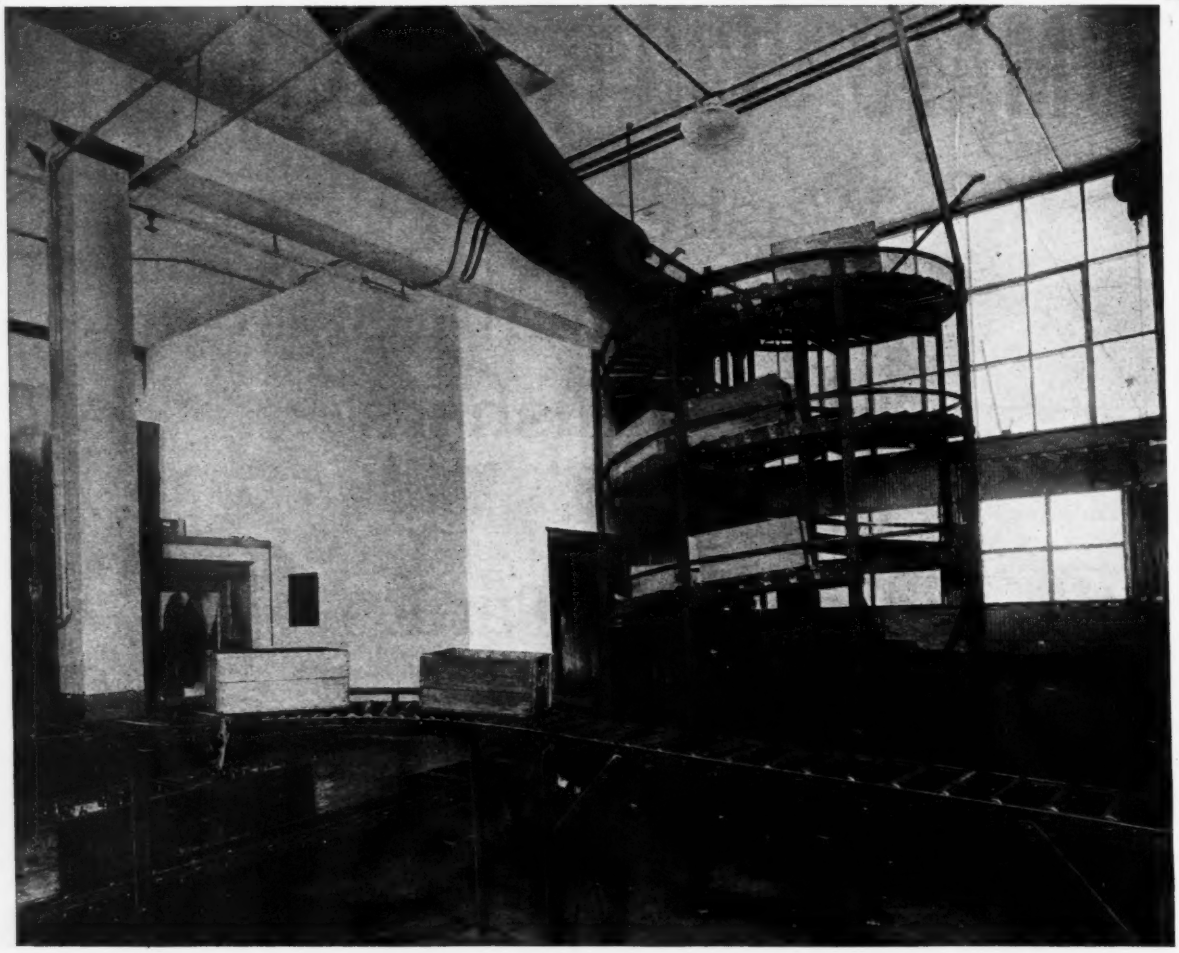
Washers
Pulp Machines
Pulp Finishers
Pumps
Cooking Tanks
Copper Coils
Steam Traps
Filling Machines

and

THE "WONDER" CONTINUOUS COOKER

May We Figure On Your Requirements?

A. K. ROBINS & COMPANY
MANUFACTURERS
Baltimore = Maryland
Factory, DELTA, PA.



Take Boxes, for Instance—

Just to illustrate how modern efficiency has been developed and applied to package handling, the attention of Canning Factory executives is directed to the above view of correlated gravity conveying appliances.

The package can consist of any kind of container made of wood, metal or fibre, barrels, kegs, cans, tubs, trays, etc. Or it can be any commodity having a sufficiently hard, smooth surface to move easily over ball-bearing rollers on a slight down grade.

Mathews Gravity Conveying Systems are proving the salvation of many production executives in hundreds of American factories to day where every minute of time gained in handling raw and finished products is of incalculable value.

The routing of packages through the plant are simple problems for our engineers. They will lay out a system, blueprint it, explain its operation and submit estimate of cost, all without obligation.

Standard Equipment:—

Gravity Merchandise Conveyor
Gravity Lumber Conveyor
Gravity Brick Conveyor
Gravity Pig Iron Conveyor
Gravity Roller Spirals
Gravity Spiral Chutes
Automatic Package Elevators

Send for Catalog "C"

Mathews Gravity Carrier Co.

Ellwood City, Pa.

Branch Factories: Toronto, Ont., London, Eng.